THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

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ART AND MEASUREMENT.

THE interesting theories of Mr. Hambidge acquire a peculiar importance at the present time, in the light that they shed on the attitude adopted towards art by so many writers and reformers. In some ways they are an advance, because, though indirectly, they assert the need of change in the practice of the artist. And this is a healthy sign. But if the arts fail us, if what Mr. Hambidge brings against the practice of art in modern times is true, the reasons do not lie in want of measurements, or of all the pride of intellect and thought. In fact, it is rather curious that at a time when so many of us are feeling the burden of accumulated knowledge, and the desire is so strong for more direct expression, Mr. Hambidge should place such dependence on it. For there is truth in the view of Wordsworth that a few plain principles of life and conduct are capable of more "than all the pride of intellect and thought." If the arts are not able to sustain a conception of life in which vision and imagination are predominant, it is because they are not penetrated by a motive and outlook to enable them to do so. We shall not be able to present a god through mathematics! because in the end it is on inspiration and not on mathematics that beauty depends. These have their place, but they occupy one too large in the philosophy of Mr. Hambidge. They obscure his understanding of beauty and prejudice his otherwise interesting inquiries. They are also dangerous in that, at a time when we need above all things proportion in our thoughts, they extend a bias in the wrong direction. For the freedom of development which is lacking in the arts, lies in what neither measurements, institutions, forms of government, or patrons can bestow. The idealist—too often a sentimentalist—depending on favourable circumstances and an easy road, draws a picture from other periods in history—the age of Pe icles or another—when the arts flourished, and finds in the circumstances of the times the source of the artist's achievements. He does not see that the artist created the circumstances, and that there will never be circumstances which are favourable except those created by him. In one sense, no times are favourable to art, because the ideal has always to be fought for, and it is not through being the child of his time that the artist flourished in the time of Pericles or in any other age. Phideas was greater than his times; so was Michael Angelo. There is no cause operating more disastrously at the present time than this shallow theory of the dependence of the artist on circumstances. If art flourishes, it is because of the artist; because he has attained to a freedom which no one else can give him. If he fails, it is because of his timidity. It is this timidity which leaves room to flourish all those abuses and other reactionary influences which withstand art. The fear of poverty saps independence, and leaves art the hanger-on of society and of the rich. The arts cannot face both ways at the same time, yet they continually seek to do so; clamant for the claims of art and at the same time conforming to those influences which most withstand it. Some find institutions and societies abounding (in which the ostensible aim is to promote art) the machinery of which is anti-social in spirit and continually increasing in the direction of exclusive and aristocratic forms. We recognise correct behaviour to lie in conventionality, and flunkeyism towards reputation which is often the recipe for office. All this is deplorable, and is in our midst. Mr. Hambidge tells us that there is so much lacking in art that we should have thought that improvement depended on more than his theory can do for it. We must not cover up our ugliness with rags, or complain of the sun if it will not light our cigar! Yet this is in effect what is done by Mr. Hambidge. He is impatient about art. It continually gets in his way. He suggests to us that the greater part of art can be learned instead of it being the least part, as Göethe more wisely taught. This confusion in his mind deflects all his thinking. He asked (in his recent address at the R.I.B.A.) to be allowed "to leave art alone," in order to devote attention to "the subtle problems of design," and in this way we are to build up "a magnificent craftsmanship." By the separation of art from craftsmanship we shall build up nothing at all; almost all the worst evils affecting the welfare of art have arisen through our persistently trying to do so. It was the craftsmen of Ephesus who withstood St. Paul; it was Plato who pointed out that craftsmanship without the idea, the force behind it, was a "low thing." Our criticism of Mr. Hambidge is not directed against his theory so much as against the wrong proportion which it takes in his mind, the result of which is to obscure the magnitude of the task involved in building up a "superlative art production."

The Greek vase to which Mr. Hambidge referred was not created through measurements. The artist creates through laws which are not apparently dreamed of in his philosophy. The existence of the vase enabled Mr. Hambidge to make his measurements, but they did not enable the artist t create the vase! Beauty does not grow only out of mathematics, but from the deep and mysterious sources of human inspiration. We do not, however, believe in inspiration at the present time. Much is said about "the great heart of the people," and that somehow, through his grasp of this, the artist evokes success. The sheep tell the shepherd what they like, and the shepherd supplies it! We see a good example of the working of this theory in the recently erected memorial to Nurse Cavell, which reveals the two-edged character of this outlook. We should like to know how far the qualities of this memorial commend themselves to the intelligent classes of the British public? and do they meet the requirements of sculpture? It is necessary to take note of these tendencies, as they are entangled in the outlook of democracy which they do not represent. The sculptor Epstein, because his tongue is not in his cheek, arrests us, whether we would or not, because he trusts to the reality and truth of his own visions, and not to any nonsense about interpreting the "universal mind." It is all this sophistry and compromise which fortifies the impulse of self-advancement and personal aims, resulting in the poverty of the single mind. What establishes and promotes art is the strength of purpose and will in the artist, which enables him to reach a true interpretation of his vision.

The present time is not without its promise of new birth, for the arts are always near their goal. It is false to life to assume that there is no support for the true and the beautiful. The pursuit of them will create the support, and in that higher ideal of service the arts will find their goal. Their freedom does not primarily depend on the circumstances without them, but on the beliefs within them. If Mr. Hambidge is to see the presentation of a god again it will not be due to his measurement, but to the godlike qualities of the artist himself.

NOTES.

Unity in the Profession.

We have already commented on the report of the Charter Committee of the Royal Institute of British Architects recommending the holding of a special meeting for the purpose of obtaining sanction to appoint a representative committee to prepare a scheme for the unification and registration of the profession, and it is now generally known that a special general meeting will be held on Monday for the purpose. There is every reason to think that this meeting will be well attended, as it should and, we hope, will be, and that at long last a really determined attempt is to be made to secure that unity which the profession so greatly needs and without which the laudable aim of architects for an improvement in their art and status is defeated. We have previously advocated the appointment of a representative committee to prepare a comprehensive scheme and we have great hopes that, following a full and frank discussion on Monday, the Committee will be appointed, and that it will evolve a scheme which will meet with subsequent acceptance. Unity must be secured, otherwise the outlook for architects as a profession is dark indeed; unity — not self-seeking, or defiant combination, as we said last week, but the upraising of us all—and "that common action which alone can inspire that public confidence for respect for architecture which is the due of so great an art."

High Buildings in London.

The paper which Mr. H. Austen Hall read at the meeting of the R.I.B.A. on Monday, a report of which appears elsewhere, is of special interest at the present time, when several of our large drapery firms are engaged in rebuilding or are credited with the intention to do so. Mr. Hall holds strong views on the subject of high buildings if he is correctly reported in a recent interview in the *Times*. "The present rebuilding all over London, so far from being too high," he says, "appears to me to be economically three stories too low. The London Building Act is 20 years out of date; it allows only for buildings about 80 ft. from the pavement and two stories in a sloping roof. This is not high enough for the present business needs of the City and the West-end. What are required are buildings high enough to cope with the business needs of the central parts of London, the financial demands of the City, and the more general activities of the West-end. If existing buildings were raised to eight stories high it would increase the accommodation available by one-third in the City and the West-end. I think Sir Martin Conway goes too far, but the present buildings are not making a sufficient commercial use of the space available and the high ground-rents paid for it. . . . Practically all the buildings which have been started in London at the present time are too low. To get the advantage of the high ground-rents they should be at least 120 ft. high. The top stories cost very much less than the lower stories, and it is the cheapest possible way of extending one's business." This is all very sound reasoning if a city is run on commercial lines. How far commonsense should rule the life of a city is, perhaps, a debatable point.

Bas-relief, Bronze Gates, the Duomo, Pisa. By Bologna.

The American Public and Architecture.

Mr. Hall confirms in one important respect the recent remarks by Mr. Robert Atkinson in his report to the Architectural Association on the education of the architect in the U.S.A. "Everywhere in America," Mr. Atkinson told us, "one is struck by the interest taken by the public in architecture and, more important still, in good architecture." "The English attitude in building is different from the American," says Mr. Hall. "If an Englishman of the old-fashioned business type has a certain amount of space to be built over, he inquires how cheaply it can be done; the American, how beautiful a building to suit his particular business can be erected on that piece of ground. The American public has a tremendous appreciation of good architecture, and people who erect buildings there regard it as the finest possible investment of capital and, consequently, they get the best architecture in America in commercial buildings. There to a business house fine architecture is a great asset and a good advertisement. Recently some of the great English firms have been realising this also, but they are hampered by the Building Act." The soundness of these remarks is not likely to be denied by anyone who has travelled in America, where the great value to the people of education in architecture appears to be generally recognised. The subject is one which might well receive the earnest and special consideration of all architectural bodies in this country.

An American Country Cottage.

The Public and the Arts and Crafts

The matter is more or less directly referred to by Mr. Kerner-Greenwood, in his letter which appears on another page. Our correspondent realises the responsibility of the architect in the education of the public in the appreciation of the arts and crafts, and he makes a practical suggestion which, we believe, has been made before, that the best buildings should be regularly illustrated and described in our daily newspapers and monthly magazines, "by architects who have the gift of lucid explanation." This opens up possibilities for one of our progressive architectural societies, though we are afraid the results would be discouraging; and, judging from Mr. Kerner-Greenwood's concluding remarks, that the "architectural societies might co-operate with editors and proprietors of suitable media with a view to placing England in a few hundred years where Greece was two thousand years ago," he does not seem to expect the public taste to be very quickly improved; and altogether we are afraid something more is needed, though there is no apparent reason why his suggestion should not be acted upon.

The Large American Stores.

Mr. Hall, in his paper at the R.I.B.A. on Monday, drew attention to one defect that is not likely to be followed here, viz., the large amount of space that is entirely dependent on artificial light owing to the absence of light wells in very large blocks. The elevations exhibited on the screen showed great variety, and some were exceedingly good. In the course of the discussion, one speaker said he thought the stanchions generally were too closely spaced—they were about 23 ft. centre to centre; but, widely-spaced stanchions necessitate deep girders which are very objectionable, more so than closely-spaced thin columns. Another speaker drew attention to the enormous number of motor cars waiting for the large number of people shopping at one time in the lofty buildings, the congestion being so great that the traffic is blocked, which is a good answer to those who argue that congestion in London would be alleviated by the erection of sky-scrapers! A good case was made out for the alteration of the London Building Act in many particulars, but not for the removal of the restrictions as to height. It was stated that the London County Council did not consider drapery stores to be highly inflammable, but at the fire at Messrs. Arding & Hobbs, a few years back, a great deal of damage was done and many lives lost in a very short time.

Architects and the Housing Delays.

Statements have been frequently made in public that architects are largely responsible for delay which has occurred in getting houses built in connection with State-aided housing schemes. The Society of Architects is, therefore, collecting evidence in order to demonstrate to the Ministry of Health that this is not the case and, further, to show that in certain instances architects are inadequately paid under the Scale of Charges laid down in Housing Memorandum No. 4. Architects engaged in carrying out State-aided housing schemes are invited to communicate with the Secretary of the Society of Architects, at 28, Bedford-square, W.C. 1, giving such information as will enable that body to present an incontrovertible case to the Ministry of Health on both these points.

The R.A. Exhibition and Sending-in Day.

Architects must always feel envious of the extra three days which the painters are allowed for sending subjects to the Academy. Whilst architects must deliver their offerings on Friday, March 26, painters are allowed till Monday, March 29—an extra time which makes a great deal of difference. The dates for sending in might (with commendable advantage to painters) be extended some two or three weeks, as the light is often very uncertain just about the usual time. Why could not the exhibition open towards the end of May? There should be a plethora of subjects for the architectural room this year, as many and great schemes of building are in contemplation. It will be interesting to see how far architects accept the invitation of the Council to send detail drawings of their work, which will certainly add something to the difficulties of successful hanging.

From the Women's International Art Club Exhibition. (See page 330.)

[The above is probably one of the best monuments ever designed by a woman, and many designers of existing memorials might envy its distinction.]

GENERAL NEWS.

Professional Announcements.

Mr. Claude W. Ferrier, architect, has now returned to his offices at 11, Waterloo-place, S.W. 1, on their release by the Government. Telephone: Gerard 5300; telegrams: "Claufer (Charles) London."

Mr. Geoffrey Denham, architect and surveyor, who for 15 years prior to the war had offices in Jewry-street, Winchester, has since his demobilisation taken temporary offices at Easton, Winchester. He would be glad to receive manufacturers' lists for office reference.

Painters in Water Colours.

Mr. Adrian Stokes, R.A., and Mr. Edgar T. Holding have been elected Associates of the Royal Society of Painters in Water Colours.

The Alpine Club Gallery.

The Directors of the Chenil Gallery announce that by courtesy of the members of the Friday Club, who have deferred their usual exhibition, Mr. Augustus John's collection of war, peace conference and other portraits will remain on view until April 29. It is anticipated that several additions will be made during the Exhibition. The Trustees of the Birmingham Art Gallery have purchased two examples, viz., "Emir Feisul" and the portrait of a Canadian Soldier. Under the Felton Bequest, the National Gallery of Victoria, Melbourne, has secured the "Portrait of a Boy."

Leeds War Memorial.

The Leeds War Memorial Committee has decided to consult Sir Reginald Blomfield, R.A., with regard to the proposed war memorial for the city. The suggestion for the memorial to take the form of a utilitarian building has been dropped, and it is to be of a purely decorative and monumental character. A site has been selected in Cookridge-street, which will have to be considerably widened for the purpose. After the site has been inspected by the consulting architect, competitive designs will be invited for the monument. The cost has not been definitely fixed, but is expected to be about £100,000.

London Traffic.

The Advisory Committee on London Traffic has, in order to relieve the traffic congestion during the morning and evening "peak-load" hours, taken steps to ascertain the extent to which the hours of working in Central London can be varied, so that a larger number of persons may be enabled to leave between 4.0 and 4.45 p.m., instead of at 5 o'clock or later. The Committee believes that substantial benefit would result from the adoption of some such measure by "allied" businesses, and it solicits the co-operation of large employers of labour in this direction. Communications on the subject should be sent to Mr. J. A. C. Champion, Development Department, Ministry of Transport, 6, Whitehall-gardens, S.W. 1.

Labour for Housing Schemes.

In answer to Mr. Myers, in the House of Commons, on Monday last, the Prime Minister stated that for the erection of 13,205 houses there was a shortage of 3,356 bricklayers, 1,344 carpenters and joiners, 98 slaters, 193 plasterers, 180 plumbers, and 310 painters and glaziers. The estimated number of men required for the erection of 200,000 houses per annum, the number necessary to cope with the housing difficulty, was 64,800 bricklayers, 55,800 carpenters and joiners, 6,800 slaters, 22,000 plasterers, 9,600 plumbers and 11,000 painters.

Obituary.

The death occurred on March 12, at his residence at 192, Clapham-road, S.W.9, of Mr. Robert Page, F.R.I.B.A., F.S.I., senior partner in the firm of Messrs. Stock, Page and Stock, architects, of London Bridge, S.E.

At the meeting of the Royal Institute of British Architects on Monday last, the Hon. Secretary announced the decease of Mr. George Ogden and Mr. A. J. P. Carrington, Licentiates.

COMPETITION NEWS.

Bradford-on-Avon (Wilts.).

For the War Memorial Committee.—Design for a war memorial. Premium 25 guineas. Sending-in day, May 8. (See our issue for March 5.)

Cleethorpes.

For the Memorial Committee.—Designs for a memorial building. Premiums £50 and £25. (See our advertisement pages, to-day).

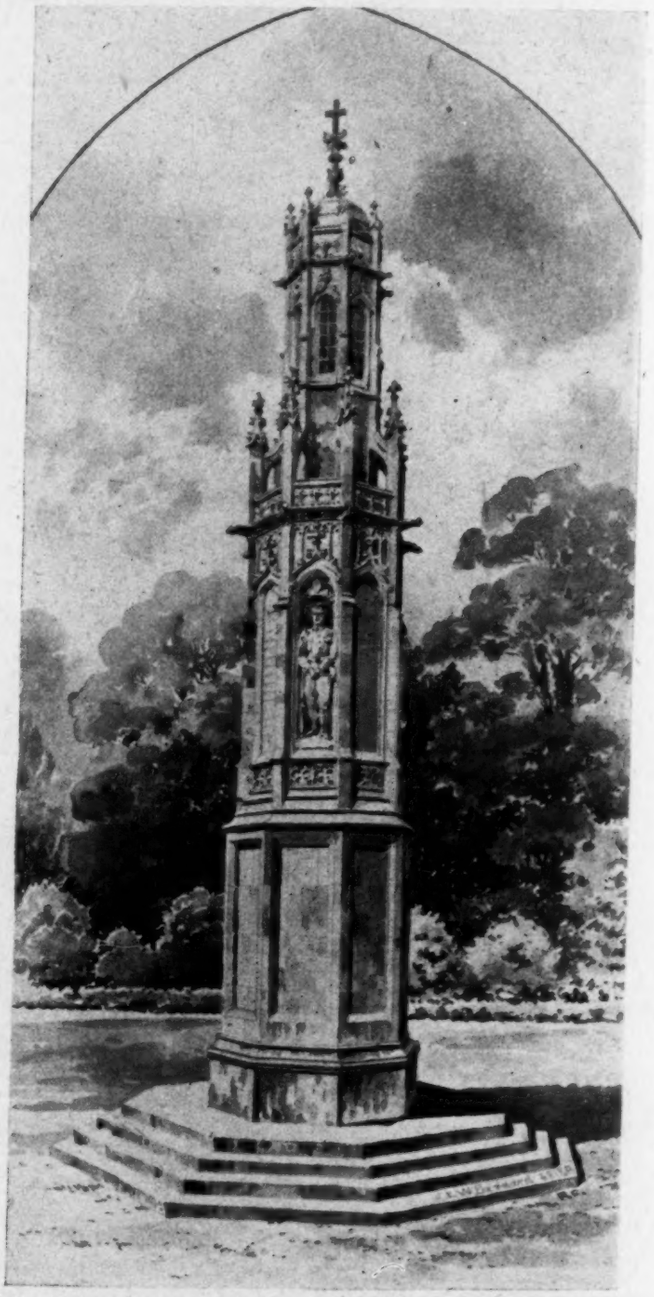
Hornsey.

For the War Memorial Committee.—Designs for a war memorial. First premium, 30 guineas; second, 20 guineas; third, 10 guineas. Sending-in day April 20. (See our issue for March 5.)

The R.I.B.A. and the Society of Architects call attention to the fact that the conditions of this competition are unsatisfactory, and they are negotiating with the promoters in the hope of securing their amendment. Meanwhile, members are advised to take no part in the competition.

Sheffield.

For the City Council.—Designs for war memorial halls. The selected architect will be remunerated according to the schedule of charges issued by the R.I.B.A., and premiums of £250, £150 and £100 will be paid to the authors of the designs placed second, third and fourth. Sending-in day, July 31. (See our issue for March 5.)



Prestatyn Town War Memorial.

[This illustration is of the first premiated design in the recent public competition won by Mr. L. W. Barnard, F.R.I.B.A., of Cheltenham. The memorial is to be of Portland stone, and is to be carried out by Messrs. R. L. Boulton & Sons, of Cheltenham, at a cost of £750.]

CORRESPONDENCE.

"Esse Quam Videri."

SIR,—I must plead guilty to the soft impeachment—I am young. Having been precocious from the cradle, I am cognisant of the crime. In extenuation I plead that I am removing the stigma year by year, and would suggest that though an engine is a far more modern invention than a rudder, both are necessary to progression. As it would appear that the Institute has at last been stung to action by something, though I do not suggest it was by the frivolous utterances of youth, it would be wiser to await the deliberations of mellowed middle age before continuing the discussion.

May I take this opportunity of offering my thanks to Mr. Butler for the very sporting moderation he has shown towards my youthful impetuosity, and of saying that though young I am old enough to recall during several years his beneficent enthusiasm for the welfare of the profession?

H. BRYANT NEWBOLD, M.A., S.R.A.

Architects' Licence Law.

SIR,—Mr. Newbold's preamble calls for no comment beyond a contradiction of the statement that "the Society of Architects has stated that they are powerless to protect," whatever that may mean. Regarding the Licence Law, Sections 1 to 4 are machinery. Section 5 is interesting as prohibiting joint stock companies from obtaining a licence to practise architecture, but there is nothing to prohibit them doing architectural work under some other description. Sections 6 to 8 are common to such laws in other countries, and Section 9 goes one better than any Registration Bill yet introduced in Great Britain, inasmuch as it not only defines an architect, but makes it clear that quite a number of persons who are not architects, but who are concerned with the construction of buildings, would be entitled to register as architects.

Perhaps it is in anticipation of some such measure becoming law in this country that at least one muncipality has conferred upon its engineer the title of "architect" to ease the situation so far as the local housing scheme is concerned. Sections 10 and 12 are the machinery for revoking or renewing licences.

Mr. Newbold does not mention in which of the States of America the Licencing Law which he quotes is enforced, but as he has had actual experience of working under the Act he can no doubt give instances of action being taken by the Board under Sections 5, 8, 9, 10, or any other Section, with such effect as would justify his assumption that a similar Act in this country would be a panacea for the professional wrongs which he is out to right as the self-elected champion of a long-suffering profession.

C. MCARTHUR BUTLER, F.C.I.S.,
Secretary, Society of Architects.

The Architects' and Surveyors' Assistants' Professional Union.

SIR,—A rumour seems to be flying round that among the members of the Executive of this Union are representatives of practising architects and surveyors. I trust you will allow me space to contradict this damaging report, which may, in the first instance, have been set going either unintentionally or out of malice. The practitioner is not eligible for membership of the Union, except in a purely honorary, non-voting capacity, and members establishing their own practices must revert to this class. The Executive is composed of members of the Union in every way eligible for such membership.

There is another point for which I would crave a little of your space. Many gentlemen seem to be afraid to join us in case we should become "extreme." We have shown little sign of this so far, and it is certainly the desire and hope of the present Executive to pursue nothing but a reasonable yet not the less effective programme of reform. May I point out to such gentlemen that the so-called "extreme" or "advanced" members of a trade or profession will always be among the first to join such a movement as ours, be the programme ever so moderate? The surest way to maintain a moderate course for us is for those who stand outside and tremble to come boldly in and assert their membership. Inside they have the helm very largely in their own hands; outside they have no power at all, and if they believe it to be in the best interests of the professions that we do nothing extreme, they should show their loyalty to such by joining us.

CHAS. MCLACHLAN,
Hon. Secretary.

34–35, Bedford-square, W.C. 1.

The Proposed National Building Code.

SIR,—There is one point in connection with the articles "The Proposed National Building Code," now appearing in the *Builder*, that should be taken into consideration by the National Federation of Building Trades' Employers.

As your contributor points out, Regulations 6 and 7 are "hopelessly ambiguous," and he asks what is the quantity surveyor to check, and what is he to do if he finds an error? My contention is that the only thing he could check would be the moneying out of the priced items, and the casting up. Suppose he discovers any clerical errors, and on adjusting the total, finds that it exceeds the next lowest tender? In a case like this, a quite possible one, I maintain it would be fairer for the next lowest tenderer to be given the opportunity to submit his priced schedule for examination by the quantity surveyor, and if it then proved the lowest that he be offered the carrying out of the work.

It is a matter that deserves careful consideration by the Federation. I have myself come across several instances of errors in the moneying out, both ordinary and extraordinary. One glaring instance I remember was of an item which is universally measured at per cubic *foot*, being actually billed at per cubic *yard*, but priced and monied out as in cubic feet, with the result that the tender was increased over £700, an addition of over 10 per cent. on the amount tendered.

W. PARRY-JONES,
Quantity Surveyor.

"Silent Leges Inter Arma."

SIR,—We must all thank Mr. C. G. Baldwin for his outspoken letter, which is quite to the point. Good buildings are one of the best assets a country can possess. Without buildings, trade and commerce cannot be carried on. If we are not able to keep building, we shall sink into oblivion as regards our production. Production requires a building in which to "produce"; men require houses to live in; hence, building should be progressive. It is one of the oldest industries known, as Babylonian bricks, stamped with the names of kings dating as far back as B.C. 2500, have been found south of Babylon. Every encouragement should, therefore, be given to an industry of such antiquity and utility. "Finance Acts" and "Prices" should be reviewed and brought into line to meet the need of the community at the present time.

A. SOUTH.

The Taste of the Public in Arts and Crafts.

SIR,—Some very outspoken and fearless remarks were made by Sir Frank Baines when he recently addressed the manufacturers at the Ideal Homes Exhibition. He implied "that the arts and crafts movement was relatively of little influence in improving the standard of industrial design, since it dealt principally with handicrafts, and had left the British manufacturer unaffected; its whole tendency was to disregard the necessity of materially influencing the bulk production of commodities by the utilisation of machinery."

Some years ago I joined this movement, thinking I could lift my advertising and literature to a higher plane. I spent an afternoon attending one of their meetings in which fluent speakers made witty remarks, so that I, together with an artist friend who had accompanied me, had a very happy hour. I perused the literature which was sent to me, but could not digest it because it was so extraordinarily dry. There was never a single hint of any value given to the manufacturer; everything was abstract—nothing was concrete.

If an artist with as much energy as Sir Frank Baines would devote himself to educating manufacturers, I think something would be achieved, but it would not be very remunerative employment financially. Are we not progressing as quickly as one can expect for a northern nation such as ours, where we are so devoid of sunshine and colour during the dreary winter months? We have also a long way to go before we can catch up with France—quite apart from the climate—and we are apt to forget that we had hardly a scrap of architecture, "from which springs all art," until William the Conqueror brought his builders over to build his churches. We had, up to that time, only a few plain Saxon buildings. When we visit those marvellous later works of art in France, such as the church of Brou, near Maçon, which are just as intact as on the day when they were erected, and then think about the time when artistic progress was stopped in England by civil wars, the Puritans, &c., it makes one more satisfied when we see what London and many of our big cities can show in architectural buildings, and in the artistic displays which fill many of our shops.

And now I come to the reason I am addressing the Editor of an architectural paper. The architect, more than any other professional man, is responsible for educating the taste of the public in arts and crafts, for by his work the mind and the eye of the citizen is unconsciously trained. Good architecture teaches him something of the rules of proportion, and shows him the beauties of form and colour. Would not a great appreciation of art and craftsmanship accrue to the community if the best buildings were regularly illustrated and described in our daily newspapers and monthly magazines by architects who have the gift of lucid explanation? What does the average householder know about proportion, style and dignity in architecture? Would he admire the gaudy, gilded hotels, restaurants and music halls if he were trained even a little? It may be a matter ultimately for the Minister of Education, but he has more than he will get through for some years. In the meantime, the architectural societies might co-operate with editors and proprietors of suitable media with a view to placing England in a few hundred years where Greece was two thousand years ago! Why not?

J. H. KERNER-GREENWOOD.

R.I.B.A. Council Notices.

The following matters were considered at a meeting of the Council of the Royal Institute of British Architects on March 1:—

R.I.B.A. Prize Drawings.—A selection from the Prize Drawings exhibited at the R.I.B.A. in January will be sent on tour among the allied societies in the United Kingdom.

R.I.B.A. War Memorial.—The conditions of a competition, limited to Service men, for the R.I.B.A. War Memorial, were settled.

The Ministry of Labour.—Mr. George Hubbard was appointed in the place of Mr. Paul Waterhouse as the representative of the R.I.B.A. on the interviewing Board at the Ministry of Labour.

British Engineering Standards Association.—Mr. Digby L. Solomon was appointed as the representative of the R.I.B.A. on the Sub-Committee for the standardisation of copper-alloy fittings.

Exhibition of Lay-out Plans.—The Lay-out plans which were exhibited at Olympia during the "Ideal Home" Exhibition are on view at the R.I.B.A. Galleries.

MR. J. W. SIMPSON (President) took the chair at a general meeting of the Royal Institute of British Architects, held at 9, Conduit-street, W. 1, on Monday last. The minutes of the previous meeting were taken as read and passed.

THE PLANNING OF DEPARTMENTAL STORES.

MR. H. AUSTEN HALL then delivered an address, illustrated with lantern slides, on "The Planning of some American Department Stores," in the course of which he said that the principal considerations which governed the planning of large stores in America must be understood before a detailed study of the subject could be profitably followed. The object of the building being for the display and sale of goods, it followed that everything must be subordinated to that purpose. The architecture must be a setting only to the merchandise that was displayed, giving value to the goods for sale without competing in interest with them. In other words, the architecture was the servant of an idea in the strictest sense. The planning and equipment of a store would provide: first, the best possible display of merchandise; secondly, the greatest facility to the public for purchasing in comfort. Since it was really a practical problem of display and convenience, it was necessary to bear those two governing considerations in mind.

The Wanamaker Building.—The Wanamaker store in Philadelphia (Messrs. D. H. Burnham & Co., architects) was completed in 1911, and was the largest store in America in one building. The building occupied an entire city block, and measured 480 ft. by 250 ft. It was twelve stories high, and rose 247 ft. above the pavement. The basements were 34ft. below the street level, making the total height of the building 281 ft. The site was surrounded by streets on the four sides, which gave the opportunity for an ideal store plan. The site was already occupied by the old store, and it was desired to interfere as little as possible with the existing buildings during demolition. The work was divided into three portions, and the excavations under the first portion were carried out before the demolition of the building. The upper part was underpinned, the basements excavated, and the foundation wall and retaining walls brought up to the state in which they were ready to receive the stanchions and superstructure—a remarkable undertaking, which was completed in nine months. The old buildings standing over the new basements were then pulled down, and the same procedure was followed in the other sections.

Another matter of interest in the construction of this building was the consideration given to the possibility of settlement in the ground under the enormous weight it was called upon to take, so that there should be no sign of separation in the stone joints where the sections joined up. Accurate records were taken by bench marks of the settlement during the building operations from commencement to completion. The building went down half-an-inch, and this was allowed for in building the subsequent portions. The calculations were exact, and there was no sign whatever of the junction of the three portions. The entrances were in the centre of each of the four fronts, and were treated in a most dignified manner. No name appeared anywhere outside the building.

The plan was divided into three sections by fire walls running the entire width of the building. In London the limit of open floor space was 20,000 ft. super, whereas the central portion in this building was 50,000 ft. super, and the remaining portions 35,000 ft. super each. The magnificent effect of these great spaces could only be realised by those who had seen them. Each of the fire walls had three openings in it, with fire-resisting doors and the usual fusible link device for closing automatically in case of fire. Tower escape stairs were planned at each end of the fire walls. These stairs were reached by balconies open to the air, and were planned with double decks—a stair within a stair. In addition to these escape stairs, there were six main staircases and four separate stairs to basement, making eighteen in all.

The lifts were placed along the fire walls, and on both sides in long banks. The position was central, and no light was obstructed by this arrangement. There was some objection to so many lifts in a straight line, because it was difficult to catch a lift if one were waiting in the wrong place in a long line of lifts. This was overcome to a great extent by making six together travelling up and six down. There were sixty-eight lifts in the building altogether, of which fifty-two were for passengers. They measured 6 ft. 6 in. by 5 ft. 6 in. inside the cage. In addition, ten small electric lifts were installed from stock rooms to selling floors for the quick delivery of goods. These adjoined the spiral conveyors running from the top floors to sub-basement. These conveyors or chutes were four in number, constructed of steel, and made in double spirals; in one spiral parcels were carried to the basement delivery room for despatch to customers; the other spiral carried goods from the stock rooms to the selling floors below.

The spacing of stanchions, by which the plan was determined, was the first consideration in a building of this kind. The spans adopted were 22 ft. 6½ in., which appeared to work well in practice. The tendency in new stores under consideration was to increase these spans. They were being contemplated up to 25 ft. 6 ins. centres. The design of stanchion casings should be as simple as possible. The usual type employed was a plain square or round, the simpler the treatment the better, bearing in mind the subordination of architectural forms to the display of goods. The same remark applied to the ceilings; some of the vaulted and highly decorated types undoubtedly detracted attention from the goods exhibited and reduced the apparent height of the stories.

The height of stores varied considerably in America. Wanamaker's was designed on a lavish scale throughout, and this was expressed in the heights of the stories, which were as follows:—Ground floor, 27 ft.; first floor, 24 ft.; second floor, 25 ft. 7 in.; remainder, 17 ft. 5 in.; restaurant, 22 ft., all floor to floor measurements. These were greater heights than usual, but the effect was very impressive. The feature of the interior was the grand court, 112 ft. long by 66 ft. wide by 150 ft. high. The lower part of the walls was faced with bastard statuary marble with green Tinos bands. The upper portions were finished in plaster. A good effect was obtained by varying the design of the balconies, each alternate one being painted bronze colour instead of white, with the result that the scale was greatly improved, and the oppressive effect of many floor levels rising one above another was overcome. Only the very largest stores adopted the principle of a central court for light. When the claims of daylight or floor space had to be weighed against each other, the floor space was invariably chosen as the most important consideration. Consequently, the great majority of stores practically depended upon artificial light on all floors. The grand organ, the largest in the world, was the centre of attraction in the store. The floor of the grand court, as well as that of the principal aisles, was covered with pink Tennessee marble with green Tinos bands and patterns, and looked extremely well. The upper floors were all in wood; oak, maple and hazelwood being used in various parts of the building. These were usually stained to suit the colour of the fittings.

Fittings of every kind, as well as the counters, were movable, and made on the unit principle, so that they might be readily combined to form fresh arrangements to suit the manager of each department. The legs were made to screw, to enable perfect adjustment to be obtained in any alterations that might be required. Any fixed points in the planning of the building—such as stanchions—should be arranged so that the flexibility of the scheme was not lessened in any way. On the seventh floor was the restaurant, which, with the kitchens, covered the entire area of the floor. Above this were the stock-rooms. Goods were received at street level and taken up to the top of the building, where the receiving rooms, marking-off and stock-rooms were adjoining, a very marked difference from the practice here, where these rooms were invariably in the basement.

The delivery department was in the sub-basement, and goods were despatched down the chutes and delivered upon a moving belt (electrically driven) which carried them to the sorters' tables. Here they were divided into goods to be charged and those that had been paid for or that were cash on delivery. The former were sent by another belt to the sanctioning clerks, who referred to the customers' credit at the store and marked the goods accordingly. The goods, being all marked with the necessary authorisation, were packed by other clerks and marked for different routes and deposited in the sheet-writers' bins, who in turn deposited them in the drivers' bins after entering the particulars on the record sheets. The drivers in turn collected from their bins into the delivery wagons.

Although the building was of such great size, it was decided to build a separate power-house. This was situated across the street, a conduit for pipes connecting the buildings. The power-house contained the whole of the heating plant, electric light generators, pumping machinery for lifts and water supply, refrigerating machinery, and power generally. The whole of the heating was obtained from exhaust steam from the boilers. The usual method of bringing fresh air from the roof was employed, and this passed through air washers and over coils. Great attention was given to heating the vestibule, on account of the severe climate. The theory was that the cold air coming into the building when the doors were open mixed with the warm air in the vestibule and supplied the bulk of the fresh air to the building above the ground level. The basements were treated separately, and the air changed three times an hour. The large court was a great assistance to the general ventilation. A great deal of space was occupied by the rooms for the staff. Apart from dining-rooms and rest-rooms, opportunities for recreation were provided on the roofs. A staff hospital was part of the equipment of the building.

The Filene Building.—The Filene store at Boston (Messrs. D. H. Burnham & Co., architects) was unlike any other store building the author had seen. The treatment of the exterior was unique in store design, and most satisfactory. The problem was more nearly that which had to be dealt with in London—the maximum amount of glass being required on all floors. The design was practically that of a frame for the glass fronts. The solid portions of the designs were carried out as a light terra-cotta surround, with a filling of green terra-cotta coverings to the stanchions. A great deal of interest was obtained in the crowning story, and the treatment of the corners was very good. The piers on the shop-front line were reduced to a minimum, but the effect of the building appearing to stand on glass was overcome by the use of projecting canopies at the angles, which made a strong line of separation between the super-structure and the show-cases on the street level. Two entrances were provided in each street on three sides of the building, and the lifts were planned along the fourth side, where they were centrally placed

and did not obstruct light. These lifts would be better in two blocks, to break up the traffic at this point, which was very congested on busy days. The staircases were merely for purposes of escape, and no grand stair was introduced for effect. The spans of stanchions varied from 20 ft. to 22 ft. 6 in.

One peculiarity of this store was the fact that stockrooms were placed on each floor, immediately adjoining the selling departments. This arrangement, however, had not been found successful, owing to the need of expansion of departments and the consequent reduction of stockroom accommodation. The selling floors were found to be too valuable to admit of any portion being used for stock purposes. Heights of stories: 20 ft. ground floor, and 15 ft. upper floors. These were considered the minimum, but owing to restriction of height in Boston it was the most that could be obtained.

The Marshall Field Building. — Messrs. Marshall Field & Co., of Chicago, had the largest dry goods business in America. Their business was spread out in several separate blocks—erected at various dates—and connected by subways. In a store of this size the handling of goods became such a vast problem that it had been found necessary to decentralise the distribution department. This was situated in a separate building, in a central position in the city, and all goods were taken direct to this centre for distribution into the various routes.

Tiffany Building.—The Tiffany Building, designed by Messrs. McKim, Mead & White in 1906, was one of the landmarks in Fifth Avenue. Built entirely in white marble, the excellent proportions of its classic stories produced a most dignified effect. Internally the treatment was most elaborate, and was probably the high watermark of richness in the design of interior furnishings. Particular note should be taken of the showcases and counters of steel, inlaid with brass, the excellent design of the lift enclosures—all in polished steel—and the monumental treatment of the foot of the grand staircase.

Gorham Building.—The Gorham Building was designed by the same architects. This was entirely different in conception from the last-named store, and although simpler in its lines it was the most gracefully proportioned building in Fifth Avenue and the model of many that followed it. The design of the ground story gives a large amount of glass surface without impairing the solidity of the building. The severe treatment of the remainder, except at the top, gave admirable proportion to the design, and the overhanging cornice—9 ft. over the street—made a worthy finish to one of the finest designs America had produced. The interior was marked by great richness of detail, which in this case enhanced rather than detracted from the goods for sale.

Lord & Taylor's Building.—Messrs. Lord & Taylor's building, New York, was designed by Messrs. Starrett & Van Vleck. It was one of the newest buildings in the city, completed in 1914, and a most notable addition to the architecture of Fifth Avenue. The elevations were remarkable for the freshness and simplicity with which they were treated. The materials were limestone and brown bricks, which gave a pleasant colour in combination. The influence of the Gorham Building would be apparent in this design, with marked changes in the conception of the show windows on the ground floor. This was the latest phase of the shop window, and the problem was reduced to its simplest form—square window openings expressing the construction, filled in with glass and bronze in ornamental patterns. The whole of the fenestration was carefully considered in relation to the imposing doorway, which was carried up through two stories in height. Ornament was

The Wanamaker Store, Philadelphia. MESSRS. D. H. BURNHAM & CO., Architects.

confined to the doorways; and the glass faces of the windows were kept flush with the stone in the small windows to preserve the solid appearance at the angles. It was a most rational design, and one which found beauty in a strict expression of the constructional and utilitarian problems it had to solve. Internally, the treatment was more elaborate than usual. The ceilings of the ground floor were vaulted and walls and floors finished in Roman Travertine stone, an admirable material for durability and appearance, and in great demand in New York. Some entirely new ideas have been adopted in this store. One of these was the arrangement for dressing windows in the basement by daylight. The windows were all in duplicate, and were raised and lowered by hydraulic power, the showcases being interchangeable by means of a system of rails on the basement floor level. The main doorway was closed by means of a rising window, which took the place of doors when the store was shut. The top of this window-case became the mat at the entrance when the door was open. There was a basement mezzanine, in which clerks dealt with the cash from the ground floor, thus saving time and space on the principal floor. Messrs. Starrett & Van Vleck had also designed a very fine store at Toledo for Messrs. Lasalle & Koch. This was a later work than Lord & Taylor's, and in some respects more satisfactory. The very graceful treatment of the shop front would strike one as a most attractive solution of the problem, although not so logical in treatment as those in the New York store. Abercrombie, Fitch & Co.'s building, New York, by the same architects, was an example of the extreme severity with which many of the new buildings were designed. But even in this severely practical building the fenestration of the shop fronts had received that necessary degree of consideration which made it worthy of notice. The ceilings were somewhat over-elaborated, and competed far too much with the goods for sale.

The Godfrey Building, New York, designed by Mr. A. L. Harman, presented some original features. The concentration of the architectural interest in the three lowest stories was eminently reasonable. The lower portion only being for display (one of the principal objects for which the building was erected), it was made the most important part of the design.

The premises of Messrs. Black, Starr & Frost, in New York, were of unusual interest, as should be expected from Mr. Thomas Hastings [see p. 331]. The sculptured frieze over the shop windows was beautifully executed and could be made to tell the romance of commerce as well as making fine decoration. The Hardman Peck building, designed by Mr. H. A. Jacobs, was one of the best of the smaller steel fronts, and was more on the scale of the average opportunity in London. The Huber building, by Mr. J. H. Friedlander, was another admirable example of the smaller buildings on Fifth Avenue, New York. The red-tiled roof was not so suitable for a city as the parapet wall treatment, but several designs on these lines had lately been carried out in Fifth Avenue. The building for Kirkpatrick & Co., by Berlinger & Moscowitz, was one of the many beautifully executed shop fronts in Fifth Avenue. The bronze work was perfect, and this was a good example of the prolific use of this material, which made the street so interesting to an architect.

The ablest men in America had given their best to the advancement of this subject, with the result that Fifth Avenue was probably the finest shopping street in the world. The immense amount of activity in this form of building in London was the measure of our opportunity; and he had no fear of the result if the problems were approached with the enthusiasm and thoroughness which American architects had brought to bear upon them. He was not unconscious of the handicap we worked under in London, the queerness of some of the building sites, the mysteries of the rights of light and air, and, most of all, the utterly out-of-date Building Acts, which, although ably administered, did more than anything else to destroy imaginative work; but still the opportunity remained for a great occasion to be greatly met. When one thought of the splendours contained behind the walls of our great shops—the products of every country in the world—would it not be well to ask if the buildings which housed all this magnificence were really expressing their purpose adequately? Was our new Regent-street going to be the finest street in Europe, or would it suffer by comparison with Paris or New York?

Discussion.

Mr. Gordon Selfridge, in proposing a vote of thanks to Mr. Hall, said that the excellent design of American stores was the outcome of the pride which the American business man took in his undertaking; architecture had become a business to the American business man. He did not quite agree with the lecturer as to the extent to which the American public appreciated architecture, but thought they were growing to understand what architecture was.

Mr. John Murray seconded the vote of thanks, and said that if the Institute submitted to the various authorities concerned the essentials necessary to good building, the result would be that the public would be better served, architects would get a fair chance, and architecture could be improved, especially in regard to commercial buildings, which formed the chief architecture of our cities. The London Building Acts and local authorities imposed unnecessary restrictions on trade buildings, the like of which was unknown in other countries, and without the relaxation of these restrictions the traders and architects of London could not achieve such results as existed in other countries. If the limitation of 60 ft. to the top story were enlarged, buildings might be considerably improved, and finer buildings could be designed. Unless the architects of this country and the Institute recognised that the future of the architecture of the cities lay in commercial buildings, this work would be carried out by less capable hands. The authorities in this country should be pressed to allow a greater use of tunnels and subways between buildings; some borough councils allowed these to be constructed and some did not. Higher buildings had been objected to on the grounds of fire risk, but the Fire Brigade had announced its ability to throw a jet of water 150 ft. high.

Mr. Milburn (Messrs. John Barker) said that he had always found that the final authority to settle building matters had been the Fire Brigade chief, and that appeared to be altogether wrong. The high buildings in New York must have presented much more difficult problems, and there should be as efficient fire-fighting apparatus in this country as in America. He agreed that it was absolutely essential that stores should contain large open spaces to display their goods. He was certain that unless much higher buildings were permitted London would go right behind the times.

Mr. Vincent Harris said that American people looked upon architecture as an education. They were not troubled as we were in this country in planning buildings; for instance, they had no ancient lights.

Mr. Clarke (Messrs. Selfridge's) said that what struck him most was the simplicity of the planning of American stores. The open space which was being aimed for in this country facilitated the planning of departmental stores. The main object of a store was facility of service, and however beautiful the elevation the building would fail in its purpose if it was not adequately and efficiently planned.

Mr. E. T. Hall said that the building restrictions in London were ridiculous and antiquated. These regulations prevented the introduction of the great open spaces which appeared to be necessary in such buildings, and with the restriction on the cubical contents it was impossible to get in a fine hall at all. Most of the store buildings in America were very plain externally; no doubt, in consequence of their great mass, it would be impossible to give them a Renaissance treatment, but in London, where the height was restricted something better could be done in the way of noble buildings. In a new building in Regent-street in which he was interested there would be a frieze of about 140 feet of life-size sculpture.

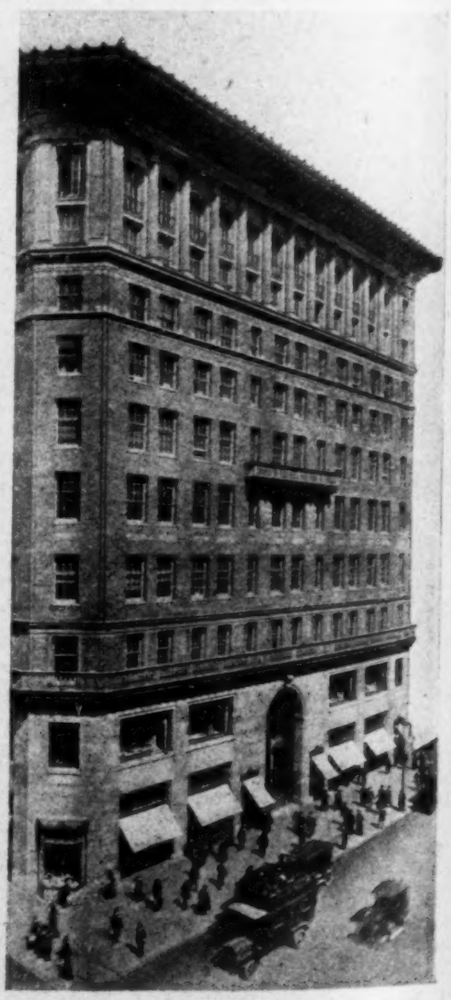
Sir Henry Tanner said that the limitation of 60 feet to the top story of a building imposed by the L.C.C. seemed a monstrous thing. Great expense was entailed in carrying a building up to 100 feet if no use could be made of the extra height.

Mr. J. J. Joass said he thought that the architecture in this country would be largely confined to the departmental store for many years to come. If it were not for the building restrictions, he thought as fine buildings could be built here as in America. He hoped that some form of combined action would be taken to have the restrictions removed.

Mr. Robert Atkinson said he thought that a great deal of the success of American store buildings was due to the engineer, who played a very important part in the planning.

The President said it was of the utmost importance that commercial men should take an interest in architecture, and architects should study only what their clients required, and put aside altogether any idea of building a monument to themselves.

Mr. Hall briefly replied.



The Lord & Taylor Building, New York.
Messrs. Starrett & Van Vleck, Architects.

THE SOCIETY OF ARCHITECTS.

ECONOMICS IN RELATION TO THE PRESENT CRISIS.

The following is an abstract of a paper read before the Society of Architects last week by Sir Ambrose Poynter, Bart., F.R.I.B.A. We hope to give a report of the discussion in our next issue:—

For the production of anything, wealth included, three things are necessary—brains, capital and labour. From this it seems there is no getting away. We may, indeed, quarrel with the distribution of what there is to divide, complain of the reward given to brain work, the share claimed by capital or the wages given to labour—we might advocate the view that capital should belong to the individual, limited companies, co-operative societies, guilds, municipalities or the State; nevertheless, these three factors remain. I define wealth, for my purposes, as the net increase given to raw material as a result of work performed by the combined efforts of brains, capital and labour.

As human beings cannot be ignored in questions of economics, I propose before examining the brains, capital and labour combination for production to give a few words to our primary raw material in the shape of humanity. When I come to consider my fellow humans in the main, four things strike me greatly. One, how much more alike are we in essentials than most of us are willing to admit; two, how enormously we differ superficially; three, how greatly these superficial differences outweigh the underlying resemblances; four, what tragic misunderstandings these external differences give rise to.

If there is, as far as the human element is concerned, so much that is good, if in addition there is so much accumulated information on, and experience in existence as to, the materials and processes of the business of production, why do we not get better results? There must be somewhere a great misuse and waste of effort, material and opportunity. That we do not get satisfactory results is evident to all; we can hear the wheels of the machine groaning, grinding and shrieking even as they turn; they not only go slow, but threaten to come to a standstill altogether. Let us try ourselves by the touchstone of work. What is the attitude of the individual to his daily work? Let me for the present begin with the "working man" pure and simple. He it is, particularly if he belongs to the painful trade union, whose vote is most sedulously wooed; he it is who is told that he, by his personal physical exertions, alone has created and is creating the wealth of the country, wealth which he therefore logically, if the premise is correct, should receive in its entirety. But is the premise a correct one?

These men are told that they alone have a right to the title of working men, and that they alone, by their exertion, are the creators and, as the sole creators, should be the sole recipients of all wealth, a tale to which they are, not unnaturally, inclined to lend a ready ear. What have these different classes of workmen in common where their work is concerned? They have this in common, that the strength or skill, or combined strength and skill, of each is employed in making or helping to make something in accordance with a design or pattern which is supplied to him by someone else, on whom, for the possibility of doing his work, he is entirely dependent. Nor are the shops and the drawing office the only departments to be reckoned with. Buying and selling must be taken into consideration. Outside the workshops and the drawing office are other skilled and trained men—not workmen—yet performing what looks very like necessary work.

In all businesses, great and small, besides the mechanic and labourer, there are many workers in other departments busy drawing, designing, accounting, buying, selling, despatching, corresponding and making decisions—people whose labour, if it be true that manual labour is the sole essence of wealth, is quite superfluous. So either the owners and managers of capital, whose life's business is to deal with money, know their money-making business so well that they pay unnecessary people to do unnecessary jobs, or else the labourer and the mechanic are mistaken in their estimate of their position, namely, that by their physical exertions they are the sole creators of wealth. It would almost seem as if they were mistaken, and that the truth is rather that, instead of forming the whole chain, they are, like the others, only links in it.

We have considered the workman in his position in the task of production and it has appeared that he is, with many others who are not classed as workmen, one of the links in a complete chain. After considering the nature of his task, we have to consider how he performs it. It is possible for an increase in the hourly rate of pay to result not in an increase but in a decrease of output, whilst at the same time there is not necessarily any increase in the average total weekly wage earned. It would seem, and the notion is a disheartening one, that the British workman is apparently, in many cases, indifferent to earning more when it is in his power to do so, and indifferent to the advantages that more brings. We get, then, this state of affairs, that an increase of wages may result not only in a decrease in the number of hours worked per week, but in the amount of work done per hour—in other words, with improved pay it is quite possible for the output to decline both relatively and absolutely. In other words, an increase in wages often results in a decrease of effort. This is a disquieting fact; it is, I believe, a policy disastrous to the men themselves.

There is to begin with the restriction of output enforced by trade unions as a matter of avowed policy, and under the belief that by this expedient competition between man and man by which only the employer benefits is prevented, and wages maintained. Then there is the idea firmly fixed in many of the men's minds that by restricting output they are creating work, though it is difficult to see how you create any work, except unnecessary work, by not doing it! Then there is the policy, not very openly avowed, of the men at the back of the labour movement which aims at ruining the capitalist by raising wages and reducing output until the capitalist finds that his business no longer pays him, when the whole concern will fall into the workers' mouths, ripe for consumption.

As a result of every error in economics the labourer and workman are the chief sufferers. They are at present, I fear, helping to raise rents against themselves. The chief victim of the scarcity of houses is thus engaged in retarding the arrival of the only remedy, viz., more houses. I would say to those who believe that high wages and low output afford a short cut to an industrial paradise, that the present advantages they enjoy are exceptional and cannot last for long.

The combination of high wages and low output with the object of increasing employment—an object which seems to me to involve a self-evident contradiction, though clearly it is not self-evident to many people—is not a profitable expedient, and will not reach the goal aimed at, which is, of course, steady employment at good wages for as large a number of people as possible. The trade union policy of a minimum output with a maximum wage is bad for the men who take part in it, and is bad for the individual, and consequently bad for the nation as a whole. The skilled workman is discouraged comparatively early in his career; he soon reaches the highest wages he can hope to attain to, and extra exertion and extra skill profit him nothing. The less skilled and less conscientious man is his equal. The policy of unions as to piecework differs; the engineering and building trades discourage a method of working which is an incentive to effort, but which other unions manage to admit. In these matters the masters must take their share of blame for a short-sightedness which, finding that under piecework a workman's earnings increase greatly, cuts his wages by putting him into a lower category for pay, under the pretext that he is "earning too much," which a man cannot do, if he earns it. And those contractors, too, are much to blame, who when carrying out "cost-plus-percentage" contracts, crowd into a job more men than it can carry, and are quite willing to see those men doing nothing half the day, so long as they can pocket their percentage on the wages paid.

I think the remedy will be found on lines of open discussion between all concerned with the utmost publicity for such discussions, leading to a place for the workman's representatives on questions of management.

Work brings work, and delay and irregularity in fulfilling orders repels it, and discriminates against the factory, or works, or shop where such output prevails. What may be aimed at, and should prove acceptable, is the scheme of a minimum guaranteed output with a minimum guaranteed wage, plus a bonus (calculated on the whole extra output) for extra production, equally divided among the men; a fair wage for workmen, a fair price for the consumer, a fair return for capital after labour has had its share, a margin of profit in addition, to provide that increase of capital which is the life-blood of industry and the source of more employment, a share in the management sufficient to let the workmen know where the difficulties of running a business arise.

The Society and the Building Trades' Exhibition.

The following facilities are available for members of the Society of Architects visiting the Building Trades Exhibition at Olympia, on any or each day:—

Architects' Club.—The Prince's Rooms on the ground floor will be available for the whole period of the Exhibition for the use of members and their friends. Over-seas architects visiting the Exhibition are invited to accept honorary membership of the Club. Officials of the Society will be in attendance every day to give information.

Season Tickets.—Complimentary season tickets may be obtained from the Society.

Social Functions.—A public luncheon, of which further notice will be given, will be held during the Exhibition in the Pillar Hall, Olympia, when representatives of Government departments, the architectural and allied professions, and the building industries, will be the guests of the Society.

Conferences.—The smaller Conference Hall on the Balcony will be available for the discussion of matters of interest.

It is hoped to hold an exhibition of students' work from the First Atelier of Architecture, and to demonstrate the basis upon which the system of architectural education advocated by the Society of Architects is founded.

Roll of Honour.

The *Journal* of the Society of Architects announces the following list of members who have fallen in the war:—

Members.

T. C. Barker.	H. Kohler.
J. Carey.	C. O. Law.
F. S. Chesterton.	W. Le Grove.
R. C. Davies.	R. W. Lines.
B. J. Emery.	J. A. Mettham.
T. H. Fogg.	E. J. Norman.
J. Haslam.	K. Peers.
G. M. Hedley.	G. A. Sutherland.
W. Jane.	A. Winch.
F. C. King.	

Graduate.

B. Langford.

Students.

A. C. Baxter.	W. H. Rebbeck.
C. E. Burden.	R. H. Richardson.
D. Evans.	T. Scott.
W. S. Hill.	E. Timmins.
C. H. Hudson.	T. E. Turner.
W. H. Marley.	A. E. Young.
S. J. Marshall.	

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ILLUSTRATIONS.

Sketches in Italy.

We illustrate this week two Italian palaces from drawings by Mr. E. B. Musman, B.A., A.R.I.B.A.

Mr. Musman writes: "The Palaces of Genoa have been much praised and are said to have earned for that city the title 'La Superba.' This title is justly earned, for their halls and staircases are among the finest examples to be found in any city. The most interesting of these is, perhaps, the Cortile and staircases of the Pal dell' Universita, designed by Bartolomeo Branco, 1623. In this example one sees to best advantage how much can be achieved by axial planning on a steep site, and also how dignified and restrained, and yet how rich in effect, the coupled columns and simple arcaded treatment can be made to appear. The vistas everywhere are magnificent. Among the works of Andrea Palladio less frequently illustrated, is the Pal del Consiglio Municipio, Vicenza, a comparatively small building opposite his great masterpiece the Basilica. Though rather overshadowed by the latter building, it is nevertheless a beautiful and interesting example of his genius. The effect of the composite columns reaching through two stories, the attic over well set back from the wall line, the general excellence of the proportions and the fine scale all produce a very happy effect. Carried out in stone instead of brick and stucco, this effect would have been finer still, as in its present dilapidated condition one is rather apt to overlook its many good features."

Houses at Alderley Edge.

This pair of houses is now being built in Congleton-road, Alderley Edge, near Manchester. The living rooms and parlours are arranged on the garden front so as to obtain full advantage of an exceptional view, and the site being too narrow for an extended plan, the type shown has been adopted, with the advantage of having the garden screened from the observation of the kitchen quarters. A rapid fall in the site enables a useful workshop and store for motor cycles, &c., to be placed under the living rooms, and allows the introduction of a terrace the full length of the garden front. The walling and buttresses of the terrace will be carried out in rough bricks of excellent colour, obtained from old buildings pulled down in the neighbourhood. The kitchen has range, gas cooker, sink, dresser, larder and scullery opening off, and is conveniently placed for the various services to living room, front door, &c. The materials are brickwork covered with rough plaster; entrance arches and stacks in sand-faced bricks; hand-made pantile roof; the principal ground floor rooms have wood block floors on hollow reinforced bricks. The building is being carried out by Messrs. Isaac Massey & Sons, Ltd., Alderley Edge, the architect being Mr. F. Milton Cashmore, 18, London-street, W. 2.

P. & O. House, Cockspur-street.

This drawing is the general view of the interior, showing the new scheme of decoration of which the geometrical drawings were exhibited in last year's Academy. It was worked out by the late Lieutenant Geoffrey Allfree, R.N.R., in conjunction with the architect, Mr. Arthur T. Bolton, F.R.I.B.A., of 10, Lincoln's Inn Fields. By a singular mischance this brilliant young artist was drowned in a storm off the coast of Cornwall, where he was in command of a flotilla of motor boats, just when he had completed the small sketch designs. A fresh start had to be made with the scheme, and it has been carried out with important modifications by Mr. Frederick Beaumont, R.I., of Logan-place, Kensington. The ceiling has been completed, and the canvases on the walls will be put in place during the present year. The general effect of the interior has been completely changed, but all that was of distinctive value in the original shipping office has been preserved. The scheme of electric lighting has been altered and six new chandeliers of bronze, with Italian alabaster bowls, have been made by the Birmingham Guild from the architect's designs. Messrs. Trollope & Colls have carried out the alteration work both inside and out, and have also made the new furniture. The ground floor front has been changed from dark polished Norwegian granite. The new Scotch granite has been supplied by Messrs. Fyffe, of Aberdeen. The present finish of the entrance to the shipping office is provisional until new bronze work has been cast by Mr. Burton, of Thames Ditton, from the model by Mr. E. G. Gillich, of Chelsea. His figures, which represent Asia and Britannia, are caryatids exceeding life size. It is expected that the office will be opened by Easter.

South Country Cottage.

We also illustrate a design for a south country cottage, by Mr. Ernest G. Allen, F.R.I.B.A.

EXHIBITIONS OF THE WEEK.

Leicester Galleries.

The method of expression in art has been so varied through the ages that there is not much room for surprise nowadays; but it is always interesting to find the arts triumphant where the methods present difficulties. Sometimes Mr. Chas. Ginner triumphs over his method and sometimes his method of line, dot and colour is a triumph in itself. Anyhow his thirty-five drawings at the Leicester Galleries have a character and value of their own which is due to his individuality of method; in some cases the colour is of foremost account, as in Nos. 32 and 35; in others the pattern is the chief attraction, as in Nos. 7 and 1; whilst his method compels the sense of reality in "Rain on Boscastle," 12, and not at all of space in "Trafalgar Square." An artist who can do what he does is certainly to be congratulated. There are some admirable examples of Mr. Jas. L. Henry's paintings at the Leicester Galleries, and some of his work reaches a significant quality, such as Nos. 26, 2, 10, 13 and 16. This artist knows how to use blue with fine results; it absolutely sparkles in "The Red Mill," but all his work is well balanced and strong.

Women's International Art Club.

The Women's International Art Club is holding its nineteenth annual exhibition from March 9 to 24, at the Grafton Galleries. The collection does not quite bear out its first promise, but we are glad to know that the value of the decorative quality is becoming more apparent as in Miss E. Hervey's (32) and (34), Mrs. Mary McCrosham's "Tintagel" (48), and "Cornish Sea," (63), a fine piece of colour, Miss E. McNaught's "Snowdon" (89), and Miss Anne L. Faulkner's "Harvest Field" (125). There are some charming drawings by Mrs. Dods Withers (78 and 79), by Miss T. R. Snells (230), Miss Grace Rogers (181–4), and Mrs. M. A. Eastlake, "The Old Mill" (197). There is some delightful sculptured work, which includes an exceptionally good bust on a pedestal by Miss Phoebe Stabler, a really dignified and satisfactory Zeebrugge Memorial by Miss Edith Bateson, illustrated on p. 323, a graceful figure "La Joie de Vivre," by Miss Margaret Wrightson, beautiful pendants with gold enamelled work by Miss Ethel Kirkpatrick, and dainty pendants by Miss A. S. Kinkead; one would have welcomed more of such admirable craftsmanship,

THE LONDON SOCIETY.

CENTRAL LONDON IMPROVEMENT.

The annual general meeting of the London Society was held at the Royal Society of Arts, John-street, W.C., on Thursday, last week.

Sir Aston Webb, P.R.A., who presided, in moving the adoption of the annual report, said that during the year the Society had over 200 new subscribers, and that satisfactory increase was steadily continuing. The Development Plan of Greater London, now hung in the London Museum, was always referred to by local authorities contemplating housing schemes, to see whether what they proposed was likely to interfere with the arterial roads laid down. The book on London was well under way. It was referred to as "A New London," but he hoped that was not to be the title, as they did not want a new London. He hoped the title might be "London of the Future." They had great difficulty in restraining some local authorities from building over the open spaces in their areas; these should be left open for all time, and he would like to see it made impossible to build on any of the remaining open spaces in London. He hoped that, whatever might ultimately be done at Charing Cross, it might not be necessary to sweep away the Adelphi Terrace, which was a charming result of the work of the brothers Adam. There was also a great scheme of reconstruction proposed for Westminster, which included sites for huge buildings which would almost dwarf the Abbey. He had been asked to join the Executive Committee dealing with this proposal, but he certainly did not intend to do so; the scheme did not seem to merit the support of those who desired a practical scheme of improvement for that part of Westminster.

Mr. Henry Lovegrove, in seconding the motion, remarked upon the useful work that the Society had been able to carry on during the war.

Sir William Davison, M.P., in supporting the motion, said the members of the Society had every reason to be satisfied with the progress shown since its inauguration eight years ago. The production of the Development Plan alone was something to be proud of, and in years to come it would prove a great boon. If such a plan had been in existence 50 or even 100 years ago, and had been made the foundation of London improvements, London would have been a much more beautiful and convenient place to live in. With reference to Charing Cross, he felt that it was a great misfortune that that fine view should be marred by the Charing Cross Railway Bridge, which was certainly not beautiful and was now ceasing to be useful.

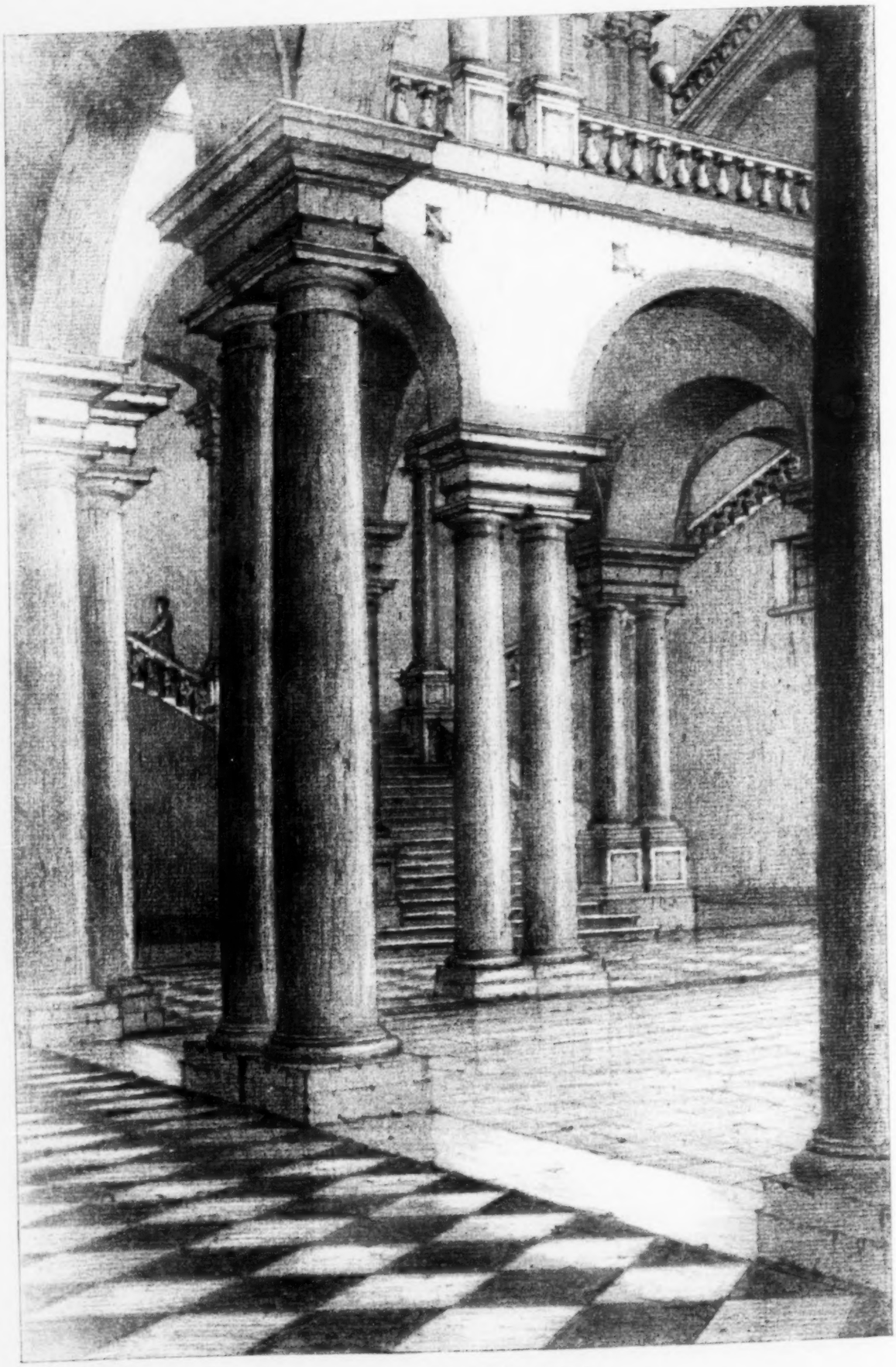
The motion was unanimously carried.

Lord Crewe, in moving the election of the Council, said that the postponement of the Charing Cross improvement scheme for a time (due possibly to financial considerations) did not greatly matter, provided that nothing was done by any expenditure of money or in other directions, or by the creation of any new interests, which would make the achievement of the main object more difficult.

Mr. George Corderoy seconded Lord Crewe's motion, which was carried unanimously.

Among the new members of the Council elected were Mr. William Woodward, F.R.I.B.A., and Mr. W. J. Tennant.

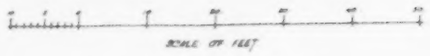
The annual meeting was followed by an address by Lord Lytton, on "The Inns and Taverns of London," in which he advocated an improvement in the type and system of management of public houses.

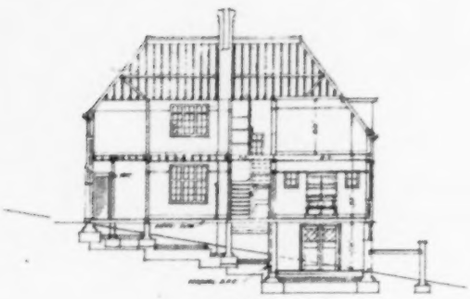


PALAZZO DE UNIVERSITA, GENOA.

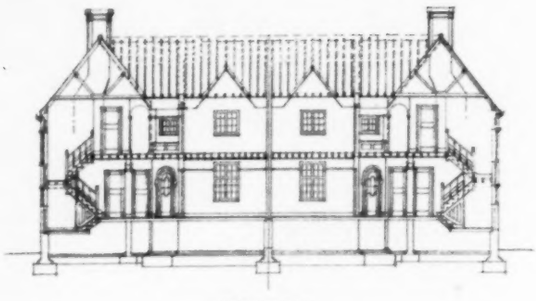
FROM A DRAWING BY MR. E. B. MUSMAN, B.A., A.R.I.B.A.

TWO HOUSES ALDERLEY EDGE CHESHIRE
FOR F.W MASSEY ESQ

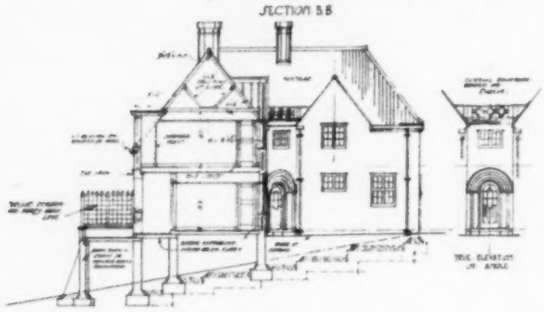




SECTION B.B

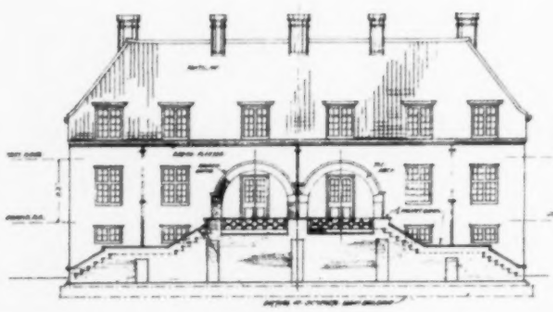


SECTION C.C



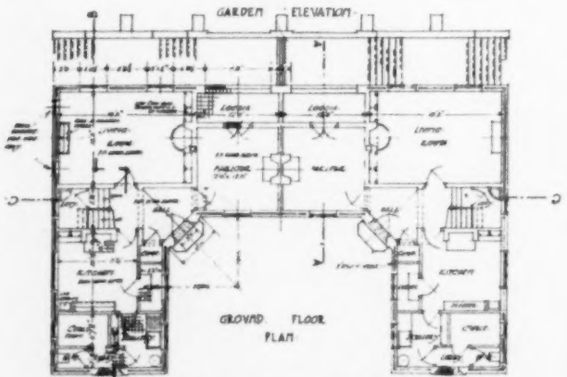
SECTION A.A

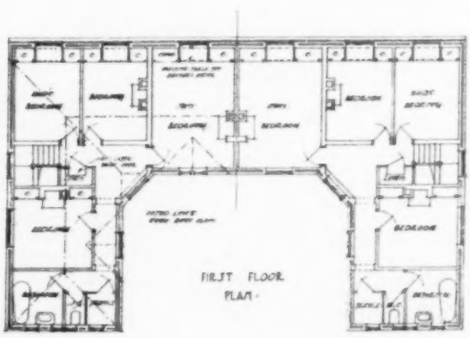
SIDE ELEVATION

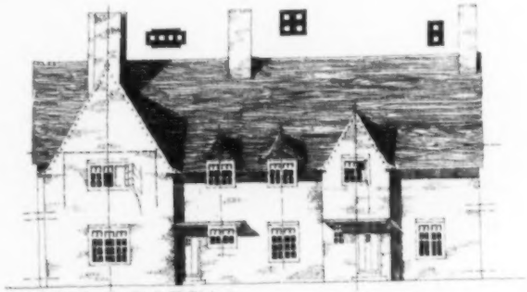


GARDEN ELEVATION

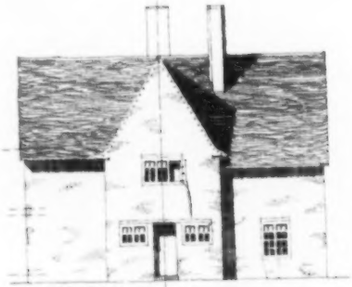
FRONT ELEVATION







FRONT ELEVATION



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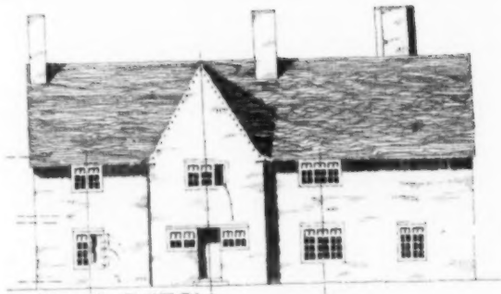
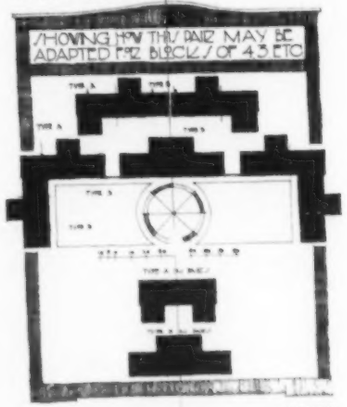
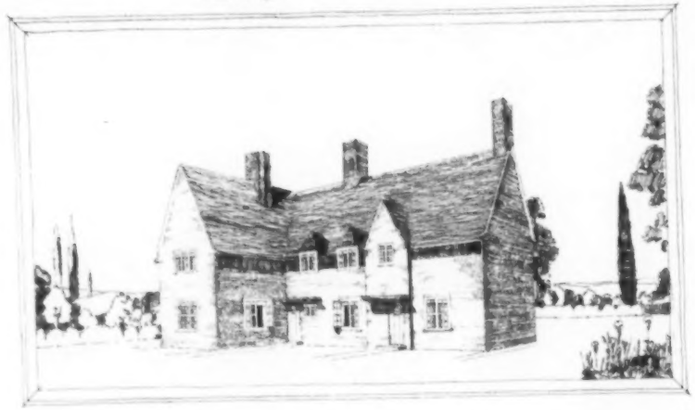


REAR ELEVATION



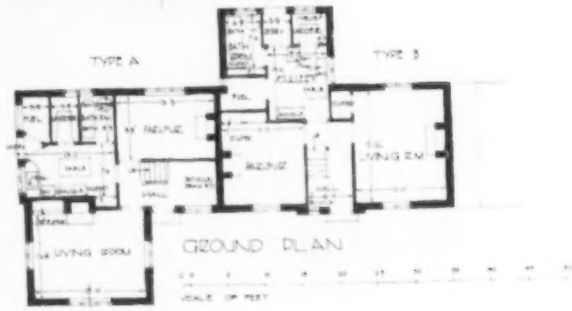


NOTES ON CUBICAL CONTENTS & AREAS

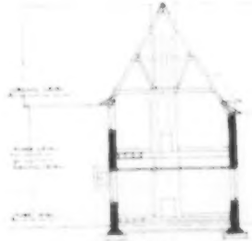
ROOM	AREA		CUBICAL CONTENTS	
LIVING ROOM	180	181	1440	1448
PARLOUR	116	121	928	968
SCULLERY	80	80	640	640
BATH ROOM	28	33	224	264
LARDER	22	18	176	144
FUEL	19	25	152	200
BEDROOM No 1	158	169	1258	1352
DO 2	136	130	1104	1054
DO 3	110	110	873	880

TOTAL CUBICAL CONTENTS OF EACH HOUSE

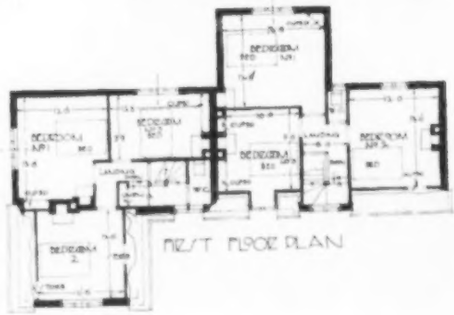
	TYPE A	TYPE B
	15103	15350
AT 4½ PER CU FT	£783	£792



GROUND PLAN



SECTION



FIRST FLOOR PLAN

DESIGN FOR A SOUTH COUNTRY COTTAGE, BY MR. ERNEST G. ALLEN, F.R.I.B.A.

PAL. DEL CONSIGLIO, VICENZA.

FROM A DRAWING BY MR. E. S. MUSMAN, B.A., A.R.I.B.A.

SHIPPING OFFICE COCKSPUR STREET · GENERAL VIE

MR. A. T. BOLTON, R.I.

RAL VIEW SHOWING SCHEME OF DECORATIVE PAINTING

T. BOLTON, A.R.I.B.A., ARCHITECT.

MEETINGS.

Friday, *March* 19.

Architectural Association.—Dinner. At 34 and 35, Bedford-square, W.C. 8 p.m.

Monday, *March* 22.

Royal Institute of British Architects.—Special General Meeting to consider resolutions for the unification and registration of the profession. At 9, Conduit-street, W. 1. 8 p.m.

H.M. Office of Works' Art Club.—Mr. A. J. Peaty on "The Place of Architecture in Guild Socialism." At King Charles-street, S.W. 1. 6 p.m.

Architectural Association.—Mr. Robert Atkinson on "Modern Architectural Methods." At 34, Bedford-square, W.C. 8 p.m.

Wednesday, *March* 24

Royal Society of Arts.—Mr. L. Gaster on "Industrial Lighting in its Relation to Efficiency." At John-street, W.C. 2. 4.30 p.m.

Industrial League and Council.—Mr. F. C. Lawrence on "Effect of Modern Industrial Methods on Employment and Wages." At Central Hall, Westminster. 7.30 p.m.

Thursday, *March* 25.

Institution of Electrical Engineers.—Mr. L. Milne on "Electrical Equipment of Artisan Dwellings." At Institution of Civil Engineers, Great George-street, S.W. 6 p.m.

Edinburgh Architectural Association.—Mr. T. A. Swan, A.R.I.B.A., on "Town Planning and Housing." At 117, George-street. 8 p.m.

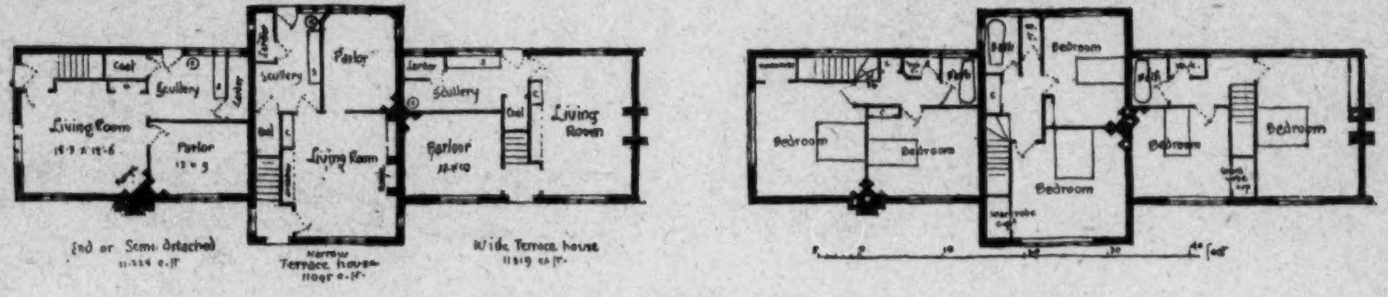
L.C.C. Central School of Arts and Crafts.—Sir Banister Fletcher, F.R.I.B.A., on "Modern Architecture." At Southampton-row, W.C. 6 p.m.

Concrete Institute.—Mr. E. L. Hall, on "Steelwork in the new London County Hall." At 296, Vauxhall Bridge-road, S.W. 1. 7.30 p.m.

Housing of Employees by County Councils.

The Ministry of Health has issued a pamphlet relating to assisted schemes for the housing of employees of county councils. (H.M. Stationery Office, 1d. net.)

The Black, Starr and Frost Building, New York. Messrs. Carrère & Hastings, Architects.



A group of Cottages designed for Oxfordshire.—MR. T. FRANK HAWKES, Architect.

[AN attempt has been made in these cottage designs to suggest something of the old local building spirit, and to get rather more out of the problem than the "brick box with slate lid" idea, which is alas! so often considered "good enough for housing!" Walls, rough cast with stone to windows, doorways, plinth and stacks, slate hanging in small rough slates to the upper story—with similar slates on roof laid in graduated courses—and with the valleys "swept" to easy curves.]

PROPOSED NATIONAL BUILDING CODE.—IV.

[Permission has been granted to the *Builder* by the National Federation of Building Trades' Employers to reprint the proposed National Building Code (which that body approved at a general meeting recently held in London) above the notes of a legal contributor. The first article appeared in our issue of February 13, the second on February 27 and the third on March 12. These articles will be continued until the whole Code has been carefully considered. The various clauses of the Code itself will be inset in the columns and quoted, followed by the comments of our contributor, whose views, we would emphasise, are not necessarily our own.]

Schedule of Conditions (*Continued*).
Clause 5.

"The Architect or his representative shall define and fix on the site all building lines and boundaries in connection with the Works, and the Contractor thereafter shall conform to the building lines and boundaries so defined and fixed and shall be without liability for and the Employer shall indemnify him against any claims, damages, costs, expenses or action in any way arising from the necessity on his part of conforming to the said building lines and boundaries and from his so conforming to the plans and instructions of the Employer or the Architect.

"The Contractor or his representative shall then set out the Works in conformity with the said building lines and boundaries so fixed and it shall be the duty of the Architect or his representative to check such setting out within a reasonable time.

"Failure on the part of the Architect to give written notice to the Contractor of his disapproval of such setting out shall relieve the Contractor, of all responsibility therefor, such written notice to be given within three days of the setting out of the Works by the Contractor, and on receipt of such written notice the Contractor shall at his own cost amend any errors arising from the inaccurate setting out unless the Architect shall decide that such amendment is unnecessary.

"If the work is set out in sections the said written notice must be given within three days of the setting out of each section and the same conditions as are herein contained shall apply to such sectional setting out.

"Thereafter the Contractor shall proceed with the execution of the Works with all reasonable diligence."

In considering this Clause reference must be made to Clause 6 of the R.I.B.A. form which reads:—"The Contractor shall set out the works and during the progress of the building shall amend at his own cost any errors arising from inaccurate setting out unless the Architect shall decide to the contrary." It will be seen that the Code Clause is a distinct advance from the contractor's point of view on the corresponding Clause in the R.I.B.A. contract, because, in the first place, the architect, and not the contractor, becomes responsible for building lines and boundaries, and, in the second place, he must check the contractor's setting out within such boundaries. Moreover, if he fails to give notice that the setting out is incorrect within three days of such setting out, the liability for error will no longer be on the contractor.

The words "within reasonable time" necessarily mean within some period of time less than three days after the setting out; and it is conceivable that, in the case of urgent work, the checking should be done within a few hours. The reasonableness of the period will be a matter for the arbitrators if the architect and contractor fail to agree.

It is curious that no provision is made in the Clause for the contractor to give notice to the architect that the setting out has been done, though the latter must give notice of error within three days! Frequently an architect will not visit his work more than once a week, and, therefore, errors made through the contractor's negligence might constantly have to be amended at the expense of the employer; also it is not clear that "setting out" only applies to the main walls of the building and it may be contended that any mistake in the position of subsidiary walls and openings amounts to a mistake in setting out. If such is the effect of the Clause it is not reasonable and requires modification. On the other hand it is clearly right that the effect of the first paragraph should be maintained. The contractor is clearly entitled to indemnity by the employer against trespass to adjoining property done by reason of conforming to the building lines and boundaries indicated by the architect, because the employer and not the contractor knows—or should know—the limitations of ownership of the site, and should instruct his architect accordingly.

A peculiarity of wording in the last lines of paragraph one may be referred to. The contractor is not only indemnified against claims, &c., arising out of the necessity of his "conforming to the said building lines and boundaries," but also from "his so conforming to the plans and instructions of the employer or the Architect." As plans and instructions have not previously been mentioned in the Clause, the intention is somewhat obscure and an alteration of phrasing might be adopted with advantage.

Clause 6.

"The Contractor shall give all requisite notices required by the Local Authority in whose area the Works are situated and to the water and lighting companies and/or other Authorities with whose systems it is proposed to connect, and shall pay all fees or charges for connections and other services legally demandable by such authority, company or department. The amount of any fees or charges so paid plus 10 per cent. shall be allowed to the Contractor and added to the Contract sum unless they have been provided in the Bills of Quantities as 'provisional amounts' when they shall be dealt with as provided in Clause 24.

"The Contractor shall conform to the regulations, requirements and by-laws of any such local authority, corporation, department or company and any variation that may be necessitated by so conforming shall be dealt with under Clause 32, but before making any such variation which will alter or revise any drawing, detail, instruction or direction given by the Architect the Contractor shall give to the Architect written notice of the variation proposed to be made."

This Clause should be compared with Clause 5 of the R.I.B.A. form. It will be seen that, under that Clause, the contractor, after giving written notice of the variations, must await instructions before carrying them through, though he may proceed if such instructions do not arrive in due course. Under the Code, however, it will become the responsibility of the architect to issue instructions to the contractor immediately on receiving notice of a variation necessitated by the by-laws, &c., if he does not approve of such variation. As there may be several alternative methods of making the variation there does not appear to be any proper regard for the architect's position in the wording of the new Clause.

The last sentence of paragraph one is quite unnecessary, as there is already provision to the same effect in Clause 4 (5). It is also to be noted that in the same paragraph reference is made to "services legally demandable by such . . . department," though no reference to any department appears previously in the Clause.

Clause 7.

(*a*) "The Contractor shall keep on the Works during the ordinary working hours a competent general Foreman and any directions or explanations given by the Architect to such Foreman shall be held to have been given to the Contractor, subject always to the provisions of Clause 16.

"The Foreman shall under the direction and control of the Contractor have sole charge of the Works including the site, approaches and access to same and accommodation ground, and all persons coming on to the Works (including all Specialists and approved Sub-Contractors and their foremen and workmen) shall obtain their instructions from and shall carry out all orders given by the Foreman affecting the general conduct of the Works and/or concerning their work where such work affects the work or arrangements of the Contractor or the work of any other person or persons lawfully engaged on the Works."

See Note to Clause 8 as to relative positions of foreman and clerk of works. See note to Clause 22 as to the relation of the contractor's foreman and sub-contractors.

Clause 8.

"In the event of a Clerk of Works being appointed either by the Employer or the Architect, he shall carry out his duties under the orders of the Architect, and the Contractor shall afford him every reasonable facility for examining the work and material on which he shall report from time to time to the Architect.

"The Clerk of Works shall not interfere with the Contractor's methods and conduct of the Works, and he shall obtain from the Architect details and information as and when such details and information are necessary to the progress of the Works and he shall obtain the prompt approval, disapproval or decision in writing or otherwise of the Architect as to any work or material or on any point arising relative to the execution of the Works.

"Any explanation furnished by the Contractor to the Clerk of Works shall be reported by him to the Architect or his Representative forthwith and for all purposes of the Contract shall be held to have been given to the Architect.

"Unless the name of the Clerk of Works has been supplied to the Contractor previous to the submission of the Contractor's estimate for the Works no person shall be appointed to that position to whom the Contractor takes reasonable exception.

"If the Contractor during the progress of the Works has reason to consider the conduct of the Clerk of Works to be harsh or unreasonable, he may bring the matter before the Arbitrator, and if such is found to be the case the Clerk of Works shall at once be replaced."

Clauses 7 and 8 should be considered together, because there is a relationship between the two positions therein referred to. The contractor's foreman and the clerk of works do not as a rule see eye to eye in regard to their respective positions on works of construction. The fact that the former is often the better paid man and the latter a supervisor often leads to some irritation on the one side and jealousy on the other, expressed in obstructive measures on both sides. Every sympathy will be felt towards a contractor who, while making full provision for the necessary inspection by the clerk of works, wishes the latter's position to be clearly defined so that there shall be no improper interference with the progress of the works from the conduct and control of which the contractor derives his profit. Whether the above clauses effect this in the most practical manner must be decided by the experienced men in both capacities; but it may be pointed out that paragraph 2 of Clause 7 appears to give the contractor's foreman powers of rather an exceptional breadth over even the employer, architect and quantity surveyor.

In regard to the first words of Clause 8, "In the event of a clerk of works being appointed," the opinion may be hazarded that an architect who did not insist on a clerk of works for any considerable work under this form of contract would be a bold man. The appointment is generally made by the employer on the architect's recommendation with a view to relieving

the architect from those serious responsibilities which he would otherwise have to the employer for the quality of materials and workmanship and accurate setting out. It is true that there are several cases in which an architect has been mulcted in damages to an employer for negligence in supervision, even where a clerk of works has been appointed, *e.g.*, Saunders and Collard *v.* Broadstairs Local Board (1890) 2 H.B.C. 164; Leicester Guardians *v.* Trollope (1911) 2 H.B.C. 419; but, on the other hand, it has been held that he is entitled to delegate the "supervision of detail of the work"—Graham *v.* Commissioner of Works (1902), Emden's Building Contracts 670 and dictum in Leicester Guardian *v.* Trollope (*supra*).

It may be regarded as somewhat anomalous that though in the Definitions Clause it is most emphatically laid down that the clerk of works is in no case to be considered the architect's representative, by paragraph 3 of Clause 8 explanations furnished to him are deemed to be furnished to the architect or his representative.

As regards paragraph 4 of that Clause, see Regulations 9 and the note thereto.

The last paragraph of the same Clause empowers the contractor, if he considers the conduct of the clerk of works to be harsh or unreasonable, to bring the matter before the architect. "If such is found to be the case" the clerk of works is to be replaced. It is proper to make such provision, but it is also desirable to indicate clearly who is to be the judge of the clerk of works' conduct. The unwillingness evidenced throughout the Code to accept the architect as a competent and impartial judge in any matter makes one loath to believe that it can be the intention of the Federation to accept his decision in this particular matter, yet no other tribunal is indicated in the Clause.

Clause 9.

"The Contractor shall not without the written consent of the Employer or the Architect assign the Contract, but such consent shall not be unreasonably withheld and from the date of any such assignment the Contractor shall be free from and held indemnified against all liability under the contract or in connection with the Works, but such assignment shall not prejudice or annul any claim of the Contractor for work previously carried out or arising under the Contract before such assignment. The Contractor shall have the option in his discretion to sublet any portion of the Works to any person, firm or company he shall think fit. Provided that should the Architect before such subletting make any reasonable objection to any person, firm or company and give notice in writing thereof to the Contractor the Contractor shall not sub-let to such person, firm or company."

The first sentence of this Clause is important and unusual and is, in fact, a provision for the substitution of a new contract, called in law "novation," a common form of which occurs where A is indebted to B and C is indebted to A, and all three parties mutually agree that C shall become B's debtor in place of A. Assignment pure and simple, though made with the consent of the other party to the contract, does not relieve the assignor from the liabilities under the contract or prevent the employer from suing him, and it appears to us that it will be extremely difficult for the Federation to justify the freeing of the contractor from liabilities under his contract, and the indemnification of him by the employer against such liabilities, in the event of the architect or employer agreeing, on the contractor's suggestion, to the remainder of the work being carried out by some other firm under a contract of assignment.

The Clause appears to be particularly unreasonable when considered in the light of the fact that the contractor and not the architect or employer is the person best able to judge whether the work already carried out or the work still to be carried out is the more or the less profitable, because at a time when the contractor thinks that he has plucked all the plums of the job, he may suggest assignment of the contract to another firm (who may be induced by him to think that there are still profits to be earned) and if it turns out that the work is unremunerative and the contractor to whom the work has been assigned fails to carry out the obligations, the employer is to have no rights whatever against the original contractor, nor to have the advantage of the stability and financial position which the contractor has earned, perhaps, by carrying out the remunerative part of the work.

No serious objection perhaps might be taken to the Clause if it were not for the proviso that the consent of the employer or architect to such assignment "shall not be unreasonably withheld," because under this provision it becomes incumbent upon the employer to prove that his refusal to do what is quite unusual and against his interests is reasonable. He will not, however, be able to plead the unreasonableness of the Clause itself because this he will be deemed to have accepted and he will therefore have to prove that there is some good reason why he does not consent to this contract being assigned under the peculiar condition that in respect of work already done he has not rights against the contractor, whereas the contractor has rights against him. In order to do this he will have to produce evidence of the relative financial positions of the contractor himself and the proposed assignee as well as all other conditions of a purely domestic nature in reference to the two contractors.

Having regard to the fact that a man who enters into a contract expects that the contractor will carry out his obligations and undertakes to pay certain monies in consideration of those obligations, it is clearly not just that he should be called upon to give proof of matters of this sort in order to preserve the existence of the contract. For these reasons it is felt that the Federation cannot have realised the full extent of the Clause as drafted and that it must necessarily be amended.

The second sentence of the Clause gives the contractor greater freedom to sub-let than under the R.I.B.A. form, but as sub-letting distinct from assignment under the terms of this Clause leaves the original responsibility upon the contractor, there does not appear to be any good reason for limiting the contractor's right to sub-let as in the R.I.B.A. form, and the Code Clause appears to be a proper and reasonable one.

It is to be observed that a person to whom the contract is sub-let under this term is not an "Approved sub-contractor" under the meaning of the Interpretation of Terms Clause 4 and Clause 22, and that there is no provision in the contract as to the position of such a person as regards either employer or contractor.

Clause 10.

"The Contractor shall provide all necessary plant, scaffolding, ways, tackle and implements for the proper completion of the Works and maintain same in sound condition and subject to Clause 30 shall remove same as and when no longer required by him for the Works."

Clause 30 makes provision for the use of the contractor's plant by the employer for the completion of the work if the contractor fails to complete, subject to certain conditions which will be referred to in the note to that Clause.

Clause 11.

"If and in case the Bills of Quantities provide and allow for the erection and removal of special scaffolding, retention of ordinary scaffolds for, and assistance to, approved Sub-Contractors (but not otherwise) the Contractor shall render such assistance and erect such special scaffolds. And in like manner all other scaffolding and ways erected by the Contractor shall be usable by the Approved Sub-Contractor subject to Clauses 22, 23, 24 but not so as to interfere with or hinder the work of the Contractor."

In reference to this Clause, see the last paragraph of Clause 4 (*a*). It should be noted that under that Clause the description of the scaffolding and its use must be "fully described" in the bill of quantities. Clauses 22, 23 and 24 deal with the relation of contractor to sub-contractor.

Clause 12.

"From the commencement until the completion of the Works (but not afterwards) the Contractor shall so far as the Employer is concerned be responsible for the care of the Works."

As to definition of completion, see "Interpretation of Terms" No. 6 and our note thereto.

(To be continued.)

THE ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.

Meetings in the Provinces.

We give below brief reports of some of the First Anniversary Meetings held by the Provincial Branches of the A. & S.A.P.U. on March 4. A report of the meeting of the London branch appeared in our last issue:—

Liverpool.—Mr. T. A. Alexander presided over a very well attended meeting of the Liverpool Branch. Mr. T. T. Rees, President of the Liverpool Architectural Society, addressed the members and expressed his full sympathy with the movement, though he doubted the title "Union." Existing organisations did not altogether meet the wants of the assistant, and hence the necessity for such a body as the A.&S.A.P.U. He hoped no vexatious restrictions would be introduced which would mar the relations between employer and employed. Mr. Grieve, the Branch Secretary, explained that there were abuses existing which must be remedied, but he did not think there was any likelihood of the aims of the Union being carried out in an extreme fashion.

Manchester.—Mr. Paul Ogden, F.R.I.B.A., presided at the meeting of this Branch. A resolution was passed urging the Metropolitan Executive Committee to take immediate action to improve the status and salary of architects' and surveyors' assistants and to carry out a more energetic propaganda throughout the country.

Newcastle.—A large attendance presented itself at the rooms of the Northern Architectural Association. Captain Lawson, Housing Commissioner for the Northern Division, presided. Owing to the illness of the County Durham Secretary, the meeting was a joint meeting of the two branches. Captain Lawson emphasised the value of the educational side of the Union's programme. He also referred to the financial side, and said that local authorities in particular seemed to have no idea of the responsibility of architects and surveyors at the present time. Mr. L. C. Fairbairn is the Secretary.

Southampton.—Southampton and Winchester celebrated together at Southampton. Mr. R. A. Duncan, of the London Executive, was present, and explained the programme of the Union. He was supported by Messrs. Tossi and Johnson, of the Southampton Branch of the Association of Engineering and Shipbuilding Draughtsmen, who described the origin and work done by their own Association. The Southampton-Winchester Branch is now definitely formed, with Mr. W. H. Saunders, of 11, Atherley-road, Southampton, as secretary.

Norwich.—The local officers at Norwich have a more difficult task to perform than their colleagues in the more industrial parts of the country. Owing to an error in stamping, many of the notices calling this meeting went astray. The attendance on March 4 was, as a result, somewhat less than was anticipated, but a good meeting was held.

The Cavell Memorial.

On Wednesday last, the memorial to Nurse Cavell, designed by Sir George Frampton, R.A., and erected in St. Martin's-place, Trafalgar-square, was unveiled by Queen Alexandra.

ARCHITECTURAL SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

Housing Schemes.

The tenth general meeting of the session was held at Birmingham, on March 5. The President (Mr. H. T. Buckland, F.R.I.B.A.), occupied the chair, and sixty members were present. The meeting took the form of "A Talk on Housing Schemes," the chief speakers being Mr. Henry E. Farmer, F.R.I.B.A. (Housing Commissioner for Birmingham and the West Midlands); Mr. W. A. Harvey, F.R.I.B.A.; and Mr. J. Crouch, F.R.I.B.A.

Mr. Farmer said that architects had not yet impressed the community with a due sense of their value. The public and many councillors were far from clear as to the functions of architects. It was up to architects to be up, preaching the gospel, until the misunderstandings and doubts were removed and housing was in their hands, and the people's homes a comfort to live in and a joy to behold. Section 1 (3) of the Housing Act, 1919, provided for the employment by a local authority of an architect, selected from a panel of architects nominated for the purpose by the R.I.B.A. The net result of the Ministry's policy was that 50 per cent. of the housing schemes were in architects' hands; and it was fair to say that, but for the Ministry's action, a very small percentage, if any, would have been carried out by architects. How many, or rather how few, houses of the working classes were designed by architects previous to the passing of the Housing and Town-planning Act of last year? The Ministry laid it down in Appendix 4 of the "Manual" issued on April 8, 1919, that competent architects should be employed to plan and design the houses to be erected. A scale of charges was agreed with the R.I.B.A.; and as no fee was, until months later, allowed to a borough surveyor in respect of plans prepared by him, every inducement was offered to place the work in architects' hands. The officials of the Ministry made it their personal concern to see that this was clear to the councils and when they were called in almost immediately, on the site inspection, they issued a questionnaire requiring expert consideration, and asked for the architects to accompany them upon the visit. Time and trouble in dealing with the lay-outs would have been saved if this course had been adopted, and much anguish spared the officials in the filling in of the necessary forms. This did not apply to Birmingham and some other large towns, where an architectural staff was in existence. The objections raised by various councils did not appear to warrant the appointment of the borough surveyor to carry out this work; and in many instances this official objected strongly to more work being thrust upon him.

Local authorities were at first anxious to proceed, but the subject was new to many, who felt the need of stepping carefully in schemes which must inevitably prove a heavy undertaking. The Housing Survey was not sent in until October 31 last, and so the general need of each local authority was a little difficult to ascertain; the calculation of an outlying district might be upset by the opening up or closing down of a factory, or by the building of a small colony by an adjoining urban authority outside its area. The liability of each district was limited to a penny rate, but the need for additional schools and buildings had to be carefully considered. The need had frequently been felt for a co-ordinating authority to deal broadly with the full matters relating to housing, town-planning, transit, arterial roads, &c., for the city and the planetary townships which adjoined its boundaries. The whole proposals of surrounding areas should be put before this authority, and unification of methods determined in relation to a great central scheme. It was useless and meaningless to dot garden villages about the boundaries of a great city if no works were in existence or if transit was neglected.

The parlour fight still raged and was particularly rampant in rural areas, where frequently all parlour types were asked for. It was far better that a family should have a large living-room, with a bay recess for the children's homework, than that two small rooms should be demanded. The extravagant waste of cube in the tiled roof was general, and if tiles were desirable the wall-plate should be lowered as much as practicable. The unnecessary projections on the score of architectural effect and the want of appreciation of the effect to be obtained by skilful lay-out ran up the cost. Even the despised "brick box with a slate lid" could effectively be treated so that it became a thing of beauty. Gretna and Queen's Ferry illustrated what could be done with a simple standardised type of house, laid out by the hand of a master of town-planning. The dresser, mangle, perambulator, &c., should be carefully arranged for on the plan, but they were not wanted in the estimate. The w.c. upstairs was nearly always a mistake, with its necessarily expensive plumbing; so also was the lavatory basin in the bath-room.

Other important questions were the grouping of sanitary arrangements, so essential for economy in plumbing; and the shallow-depth house, as opposed to the more costly building of a square type.

Much delay occurred at first through various causes, and all sorts of special construction were suggested, of which a large number had been approved by the Ministry. The majority of these were very disappointing. They must interest themselves in the subject, and endeavour to design a house of good, special construction on sound, commercial lines, keeping in mind the following points: (1) The lack of skilled labour; (2) the difficulty of transport; (3) the necessity for speedy erection; (4) the shortage of bricks and cement; and (5) the shortage of plasterers.

One of the chief obstacles to the building of working-class houses had been the diversion of the resources of the building trade into other channels. Large arrears of repair work and buildings of less urgency than housing had been put in hand all over the country, whilst the cry of production had echoed through the streets. How could a man produce under the present conditions? Authentic figures showed that we had not the skilled labour or the materials ordinarily used in house building to carry through the housing schemes already approved, together with only such outside work as was most urgently required; and, therefore, it was assumed that priority for housing would be drastically enforced.

The consent of the builders had been obtained to erect type plans instead of those deposited by them and at no extra cost, and if the builders proposing to build under this scheme would agree to employ architects who were known to have a sound knowledge of economy in construction, many difficulties would be overcome. Just now, with interest so centred on cost, the strictly practical man might neglect the all-important matter of design and appearance, and unsightliness might creep in. There was no danger of the new street of to-day becoming the slum of to-morrow; but there was a very real danger that this street might become as baldly uninteresting and depressing as the streets built by the builder of yesterday.

Mr. Crouch emphasised the importance of lay-out. Even quite plain houses might in time come to look all right if the lay-out was well planned. Generally speaking, in a large scheme, the existing main roads and the necessity of linking up the various outlying districts, would suggest the main lines to be followed in working out a scheme; the natural features and the desire to preserve, emphasise or provide further motives, and imagination and experience would do the rest. Many existing garden suburbs failed because their designers neglected to provide definite points of interest in their schemes. It was of the utmost importance to provide one or more dominating features. In regard to house plans, the Tudor Walters' Report set a high standard; but the cost of many of the schemes frightened the authorities, and lately there had been a tendency to lower the standard set up in the earlier instructions.

Mr. J. P. Bridgwater, M.S.A. (of Messrs. Ingall, Bridgwater & Porter), said the Government allowance of 30 per cent. to public utility societies seemed insufficient; on that basis, an economic rent for the houses would be three times pre-war rent, and people could not be expected to pay such an increase. In Birmingham, the £850 house would have to be let at 33s. per week, inclusive of rates at 17s. in the £. While 50 per cent. of the housing schemes were being carried out under architects' supervision, it was up to architects to prove that it was worth while for housing committees to employ them. The financial problem was the one on which housing committees were laying chief stress, and it was suggested that it might be an advantage to erect houses which, while not being extra in cost, would still have some æsthetic value. If, instead of 50 per cent., the whole of the houses were in the hands of trained architects, better results would be obtained.

Mr. A. Harrison, F.R.I.B.A., called attention to the Pine Apple Farm Housing Scheme Competition. When architects were first asked to compete, the conditions were such that no self-respecting man would submit designs. Modifications were subsequently made, however, almost at the last moment, and a number of architects sent in plans. Mr. Harrison's plans were placed first, but more than six months elapsed before he received instructions of any kind." As one might expect, during this lapse of time, prices had increased very considerably, and the estimates had to be accordingly revised.

Major Travers and other members spoke in support of the vote of thanks, which was afterwards put to the meeting and carried.

LIVERPOOL ARCHITECTURAL SOCIETY.

Gardens.

At the last meeting of this Society, Mr. H. L. North delivered an address on Cottage Gardens. The first aim in planning a garden, he said, should be simplicity. Gardens should be divided into several parts each more in harmony with Nature, so that there was a gradual transition from the garden to the country; there was often a tendency to make too much of the lawn. Privacy was essential, but so also was a vista of distance. Every garden should contain some water, the sound of which was soothing and increased rather than decreased repose, and which also gave a sense of life. In planting, a proper scale was the great thing, and the plants should be grouped instead of massed.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.

Mr. A. J. Holbrook, who has served for the past four years as resident architect, obtained permission from Lieut.-Colonel Howell-Jones, D.S.O., the C.O.O., to show the members of the Society over the Royal Army Ordnance Depot, which, until recently, was the National Shell-filling Factory at Chilwell. A party numbering about thirty motored over on Thursday afternoon last, and Mr. Holbrook conducted them round and explained the many interesting buildings, types of construction, and the purposes for which they were used during the war.

A feature of this factory was the planning and organisation brought into action as the factory developed, in order to increase the output of shells; this can be appreciated when it is realised that more than half the British shells were sent from Chilwell. No detail seemed to have been overlooked; every essential portion being in duplicate and often in triplicate so as to prevent stoppage of work due to accident or explosion or aerial attack. At the conclusion of the inspection, Mr. Holbrook invited the members to tea, when Mr Watkins (President) conveyed to him the heartiest thanks of the members for his hospitality and for having shown them so many interesting items of construction.

TOWN-PLANNING INSTITUTE.

FACTORY DEVELOPMENT AND THE DISTRIBUTION OF GOODS.

MR. G. L. PEPLER (President) took the chair at a general meeting of the Institute, held on March 5, at 92, Victoria-street, S.W., when Mr. W. H. Gaunt, O.B.E., read a paper entitled "Town Planning, with Reference to Factory Development and the Distribution of Goods."

MR. GAUNT said he believed the subject of the lecture had been little, if at all, touched on, either by text-book or lecture, since town planning came to the position it now occupied in practical questions of the day. His impression was that, so far, there was no particular authority or department charged with the duty of saying which land should be utilised for factory and industrial development on its merits for that purpose, as the outcome of their trained experience, or with any tangible principle guiding the country's industries as a whole. He had no doubt a Town Planning Department would rule out any factory land so placed as to prejudice houses or amenities; but they would view it from that point of view in the main, and not with that broad command of the question as to whether, as a producing nation, they were systematically choosing areas and guiding manufacturers in the way to utilise resources in the best way.

It would seem no further stage to have a trained authority reviewing the potential industrial sites of the country as a comprehensive whole, defining their range of possibilities, grouping them in areas for both direct and accessory trades, seeing that they were laid out with regard to the possibilities of development of railway and traffic facilities, and then indicating some broad principle of road and railway connection both internally and in communication with housing and other local features. Then the Ministry of Transport, with a full register of such sites, could afford material aid to potential factory promoters, and by co-operation with the Ministry of Health and the local authorities concerned could ensure the successful growth of production in the country. In respect of the distribution of goods, even to houses, there was danger of some extra cost or lessened service in spread-out development unless care was exercised. Twelve houses to the acre maximum, however economically disposed, meant that to deliver goods or to collect refuse much more expense was entailed than in an ordinary town. There were fewer customers per mile laid of electricity, gas, and water mains and tramway, and less contributory rateable value per mile of sewers and roads. Town planners should view the position in the light of those who had to deliver goods and provide services, and contrive to save transport.

In laying out factory land with an eye to efficiency, there was obviously every advantage in having large tracts of land reserved near the railway and canal as a basis. To lay out one area alone to include all factories was a mistake. They got the best town economics by having a variety of trades. Some trades required a large area of cheap covered space, where more or less temporary shedding might be all that was necessary. The greater freedom that could be allowed for these various policies, the better, as it was a direction in which arbitrary restrictions were apt to cause friction and prejudice town planning. He suggested that a number of secondary roads converging on to a common main road would give the necessary scope for divergent requirements. To build huge works fronting a main arterial road was undesirable. The passage of tramways, through traffic and pedestrians unconnected with the industries, only hampered the domestic traffic and interfered with the distribution of goods. These secondary roads should be wide enough to allow of a branch line of railway along one side, with a marginal space for vehicles or a light railway into which goods could be unloaded, and then transferred by small trucks or conveyors into the exact spot at the particular adjoining works where necessary. The larger works would have their own siding direct into their works. With the introduction of heavy motor traffic much of the short distance rail transport could be avoided; he would only allow it to be a permissive service for some special reason under 20 miles distance. With a number of isolated factories, individual sidings would not be worth while, but with a group of factories abutting upon a railway and motor road there were infinite possibilities of saving cartage and double-handling.

Another point to be considered was the attitude of the local authority to secondary roads and to occasional crossing of these and other roads by slow-moving railway traffic; but if these roads were secondary and not arterial and were ample in width for turning motor vehicles, they presented no practical danger to that section of the public who had business upon them. One way was to keep them private, and there were advantages in that course in that they could be closed up at night and at week-ends and holidays. An amendment of the present law should be made, so that some definition of responsibility could be arrived at which would allow the local authority to police and light and cleanse such roads in view of the contribution in rates made by the factories, and at the same time give the public a limited use of them. Contours and subsoil were frequently a difficulty in planning factory sites, and their suitability was the dominant factor to be considered. The best course was to keep the roads low and to have the factory sites a few feet above them in places, as it was easier to load and unload down to a railway than up to it. The gas works and electricity station should be at the lowest point and in close proximity to each other, and near the factory area, if not in it.

Once the necessity for avoiding expensive cartage and handling was impressed on all concerned there would seem to be some practicability in extending the use of the tramway overhead system to operate the domestic moving of railway wagons either by shunting motors or a fixed motor and capstan.

One could hardly expect the railway company's engineer to whom an embryo lay-out was submitted to trouble himself or be experienced in any other direction than the railway service to the land, and that to the extent usually provided by his own company. Nor could the sewerage engineer or the road surveyor speak for much more than their own facilities. The town-planner of a factory area should have a full review in his mind of everything which went to contribute to the complete facilities which a factory required, not only within the present by-laws, but in advance of them, if there was merit in the improvement. If they were to make progress in this direction, there must be less individuality and more co-operation between the authorities concerned. Apart from the large manufacturer who could help himself in some respects, there was a field for enterprise and national progress in a local authority determining what was the most efficient and useful semi-communal service they could afford the medium and small manufacturer, and providing and maintaining the same, even if it meant amending present legislation. The requirements of industrial development should be just as much mastered by the town-planner as were those of housing development, and it could not be expounded in lectures or text-books, but was gained by study at first hand of practical examples. It would be worth the while of the Institute and the Ministry of Transport to tabulate a list of towns and centres where modern dock and rail and handling conditions obtained, where storage by the side of branch railway lines was taken full advantage of, and where private enterprise had carried matters further than could have been possible on strict local authority by-laws.

DISCUSSION.

MR. W. R. DAVIDGE proposed a vote of thanks to the lecturer and said Mr. Gaunt's great point was that all the knowledge which existed as to which were desirable sites for industrial purposes should be utilised. That information was in the possession of the Land Valuation Department, and a useful service might be rendered to the nation if it were placed at the disposal of manufacturers generally.

MAJOR LOVELOCK said he considered it should be the duty of some authority to advise local authorities in regard to the matters put forward by the author, and such authority ought to have power to stop improper development.

PROFESSOR S. D. ADSHEAD said he would have liked to have had the question of heavy and light industries more fully developed, for obviously the requirements of a great steel works and a soap factory or a scent factory differed enormously. He would also like the question of the gradual accumulation of subsidiary interests in connection with a big industry to be discussed. Little had been said as to the connection between industry and housing. When he was at Liverpool before the war and investigated the requirements of factories in some of the neighbouring industrial towns, he found that the first requirement of a factory was that it should be situated where labour could be obtained, and railway and canal facilities came after that.

MR. REGINALD BROWN (Southall-Norwood) said that local authorities ought to have power to do anything and everything necessary for the welfare of their districts without interference from central authorities so long as they did not interfere with the general rights of the nation. If a local authority was to be called on to assist industry, then it should have the right of saying if it would allow a factory in its area and also have the right to lay down conditions as to its establishment.

MR. H. WARREN suggested that local authorities ought not to impose such archaic conditions as they did on industrial concerns who wanted to lay rails over the roads, and so on.

MR. D. B. NIVEN said there should be a sort of expert doctor to advise manufacturers as to sites. The manufacturers of lighter articles ought to be attracted to the new garden cities, as they could take advantage more easily of road transport; whereas, the heavy manufacturers must be near railways and canals.

MR. SEAGER suggested that factories should be built so as to allow railway trucks to go under them.

MR. GAUNT, replying to the points raised, said the utilisation of the information in the hands of the Land Valuation Department would be a fine thing provided it was done in a business way. He would take all industries to ports or where there was water carriage. He would leave room for the development of subsidiary trades. It was all very well to talk about housing the workers, but in these democratic days, except in some cases, it was a bad arrangement to put capital into building houses for workmen. It raised difficulties between employers and employed, and really, with the shorter hours and less overtime worked, there was not now the need for the workmen to reside close to the works. He certainly would have an authority to decide which towns were suitable for fostering industries. Why manufacturers in London went westward was because the railway service in that district was better and, moreover, with the marshy land about Hackney, there were not so many sites available. The Great Western Railway was a prosperous company, and was popular, and manufacturers, by the use of the line, could get to all parts through Reading, which had the finest railway connection in the country.

The Rome Scholarships.

The final examination for the British School at Rome Scholarship and the Henry Jarvis Studentship in Architecture will be held in the rooms of the R.I.B.A. from April 19 to May 8. Information regarding these examinations may be obtained from Mr. Evelyn Shaw, Hon. General Secretary, British School at Rome, 54, Victoria-street, S.W.

HOUSING AND TOWN-PLANNING NOTES.

Expediting Housing Schemes.

The Ministry of Health has issued a memorandum ("General Housing Memorandum No. 22") recommending local authorities to take steps in advance to ascertain the difficulties which are likely to affect the erection of houses in their areas, particularly as regards labour, materials and transport by appointing "Production Committees" to facilitate the work. These committees, it is recommended, should consist of a chairman and four members appointed by the local authority, two members appointed by the employers and two by the operatives in the building industry. It is understood that the Industrial Council for the Building Industry would be prepared to nominate the employers' and operatives' representatives, and local authorities are urged to accept this offer. A Transport Officer and a Production Officer have also been attached to the staff of each Housing Commissioner. The duties of the "Production Committees" would be to watch the progress of housing schemes, and advise the local authorities on such matters as the adoption of new forms of construction, and the steps to be taken to overcome shortage of labour or materials

Economy in Housing Schemes.

The Mayor of Fulham, on behalf of the mayors of several London boroughs, has asked the Minister of Health to receive a deputation to discuss the housing question. In a letter to the Minister, the Mayor of Fulham states that there is a growing feeling in municipal circles that, owing to the passion for cheapness, the houses to be erected as a result of the present effort will not be a credit to the local authorities or to the State. The deputation also wishes to discuss the subject of finance, the time taken for the approval of schemes, and the acquisition of land.

Brighton.

The decision of the Brighton Town Council to place the building of 478 houses on the Moulscombe Estate in the hands of eight firms of Brighton builders, instead of confirming the recommendation of the Housing Committee that the tender of Messrs. A. and S. Wheater should be accepted, has been refused sanction by the Housing Commissioner. The decision of the Housing Commissioner is based on the fact that Messrs. Wheater have fixed a maximum limit of £930 per house for the contract, whereas the local builders are prepared to build under the same terms as Messrs. Wheater, but without the limiting figure.

The Housing Subsidy.

The conditions governing the payment of grants to private persons or bodies of persons constructing houses under the Housing (Additional Powers) Act, 1919, have been embodied in a memorandum and issued by the Ministry of Health. The memorandum states that (a) the grant is payable to the person at whose expense the house is built; (b) no conditions are imposed as to the price or rent at which a house may be sold or let; (c) the grant is payable for houses of the bungalow type; (d) no grant is payable towards the cost of enlarging or adapting existing buildings; (e) the local authority may approve the inclusion of rooms other than those already permitted, provided that (i) the conditions with regard to floor space are complied with, and (ii) the sizes of the rooms are not less than the minimum sizes authorised in the case of houses built by local authorities; (f) external offices which are not an essential part of the house will not be included in measuring the floor area, but all essential parts and offices must be included even if they are provided as external offices; (g) the grant will be paid in all cases where Certificate A has been granted by the local authority, provided that the house is completed within the prescribed time.

In view of the fact that the full grant is available only for buildings completed before December 23, 1920, the Minister hopes that local authorities will ensure that applications for certificates will be dealt with as matters of urgency. Local by-laws will not apply to these houses in so far as such by-laws are inconsistent with the conditions laid down in the memorandum describing the terms on which grants will be made.

WEEKLY HOUSING RETURN.

During the week ended March 6, tenders were submitted to the Ministry of Health for 5,977 houses. Tenders for 5,173 were approved, bringing the total number of houses in tenders submitted to 72,196 and in tenders approved to 65,296.

By the end of February, plans had been approved by local authorities in England and Wales for the construction of 1,722 houses to qualify for the subsidy offered by the Government to private persons. Three-bedroom houses number 1,475, and constitute the majority; the four-bedroom houses number 210, and the two-bedroom houses 37. The total grant to which the builders of these houses will be entitled is £267,457, an average of £155 a house. Details of local authorities' schemes dealt with during the week are as follows:—

Building Sites.

Schemes Submitted.—The number of schemes submitted was 93, bringing the total to 8,925 (59,800 acres) including:—

Urban.	Acres.
Grays Thurrock	99.90
Hayes	88.42
Stamford	33.92
Chepping Wycombe	30.00
Marsden	27.11
Dudley	18.00
Bolsover	13.00

Rural.	Acres.
Cookham (6 sites)	13.86
Tiverton (4)	10.17

Schemes Approved.—Schemes approved numbered 145, bringing the total to 4,950 (40,300 acres). The larger schemes newly approved are as follows:—

Urban.	Acres.
Wallsend	116.34
Stoke-on-Trent	48.39
Itchen (2 sites)	26.00
Walthamstow	15.25
Handsworth	14.00
Alnwick	12.50
Annfield Plain	10.77
Dudley	10.35
Barrow-in-Furness	10.21

Rural.	Acres.
Chester-le-Street (3 sites)	72.85
Lanchester (2)	19.80
Grantham	18.00
Evesham (2)	13.00
Carton and Arrington	10.89

Lay-Outs.

Schemes Submitted.—Ninety-seven schemes were submitted by 64 local authorities, bringing the total to 2,924. The new schemes are as follows:—

Urban.—City of London, Barnsley, Camberwell, Ely, Erith, Grimsby, Halstead, Henley, Heston and Isleworth, Holyhead, Hoyland Nether, Islington, Lambeth, Maldens and Coombe, Merton and Morden, Middleton, Newport (Mon.), Oswestry, Portsmouth, Reigate, Rochdale, St. Pancras, Sawbridgeworth, Southampton, Sutton Coldfield, Tipton, Totnes, Walthamstow, Wealdstone, Widnes, Woking.

Rural.—Andover, Ashbourne, Banbury, Bedford, Beverley, Bingham, Bourne, Braintree, Bumpstead, Chirk, Epsom, Erpingham, Fordingbridge, Godstone, Hartley Wintney, Henstead, Hitchin, Malpas, Melbourne, Mere, Neath, Newton and Llandiloes, Ripon, Rugby, Sedgefield, Tendring, Uxbridge, Wakefield, Ware, W. Lancs., Whiston, Wycombe. County Council.—Hertford.

Schemes Approved.—Ninety-eight schemes were approved, bringing the total to 2,362:—

Urban.—City of London, Brandon and Byshottles, Bromley, Camberwell, Cleator Moor, Durham, Erith, Gelligaer, Hadleigh, Halstead, Hazel Grove and Bramhall, Heston and Isleworth, Islington, Kendal, Lambeth, Llanelly, Long Sutton, Maldens and Coombe, Merton and Morden, Newport Pagnell, North Walsham, Oswestry, Penarth, Reigate, Romney, St. Pancras, Sawbridgeworth, Sutton Coldfield, Swadlincote, Tipton, Walthamstow, Wigston Magna, Woking.

Rural.—Ashbourne, Banbury, Bedford, Beverley, Bourne, Branston, Bumpstead, Chipping Sodbury, Clare, Cockermouth, Darlington, Escrick, Hartley Wintney, Headington, Hitchin, Hoxne, Lexden and Winstree, Pontefract, Ripon, Romford, Rugby, Sleaford, Spalding, Stokesley, Tendring, Tonbridge, Uxbridge, Walsingham, Ware, Wincanton, Wycombe. County Councils.—Hertford, Huntingdon.

House Plans.

Schemes Submitted.—Schemes representing 6,074 houses were submitted. The total now represents 141,455 houses. New schemes are as follows:—

Urban.—City of London, 452 houses; Beckenham, 154; Birmingham, 18; Blackburn 72; Bromley, 150; Camberwell, 52; Cuckfield 12; Eastleigh and Bishopstoke, 226; Ely, 18; Erith, 407; Finchley, 177; Gelligaer, 106; Grimsby, 32; Halstead, 6; Hammersmith, 192; Hoddesdon, 50; Holyhead, 52; Hoyland Nether, 235; Ilford, 406; Kensington, 22; Kettering, 28; Lambeth, 76; Lewisham, 27; Liverpool, 66; Llanelly, 22; Morley, 150; Oswestry, 50; Portsmouth, 37; Ramsbottom, 50; Ramsgate, 124; Redditch, 48; Reigate, 52; Rhondda, 29; Southampton, 12; Sutton Coldfield, 16; Tipton, 30; Tynemouth, 6; Walthamstow, 1,093; Wandsworth, 250; Wealdstone, 179; Wigston Magna, 8; Wimbledon, 176; Woking, 72.

Rural.—Banbury, 14 houses; Bedford, 12; Beverley, 2; Biggleswade, 6; Braintree, 26; Bumpstead, 18; Culham, 4; Epsom, 12; Erpingham, 4; Fordingbridge, 20; Godstone, 20; Hartley Wintney, 46; Henstead, 4; Melbourne, 18; Mere, 18; Newbury, 8; Oswestry, 120; Ripon, 8; Romford, 48; Rugby, 40; Shardlow, 68; Tendring, 14; Wallingford, 8; Walsingham, 8; Ware, 24; Whiston, 14; Winchcombe, 12; Wortley, 112; Wycombe, 16.

Schemes Approved.—Schemes representing 6,630 houses were approved. The total represents 128,498 houses.

Urban.—City of London, 452 houses; Aberaychan, 375; Acton, 16; Beckenham, 154; Birmingham, 18; Brentford, 44; Bridport, 60; Bromley, 150; Camberwell, 52; Cardiff, 8; Durham, 61; Eastleigh and Bishopstoke, 226; Erith, 407; Filey, 52; Finchley, 177; Gelligaer, 106; Hackney, 68; Hadleigh, 24; Halstead, 6; Hammersmith, 192; Hazel Grove and Bramhall, 42; Hindley, 140; Hoyland Nether, 235; Ilford, 416; Islington, 47; Kettering, 28; Llanelly, 47; Long Sutton, 10; Merton and Morden, 62; Morley, 150; Newport Pagnell, 6; Oswestry, 50; Ramsbottom, 50; Ramsgate, 124; Redditch, 48; Reigate, 52; Romsey, 29; St. Pancras, 12; Shoreham-by-the-Sea, 10; Sutton Coldfield, 16; Tipton, 30; Tynemouth, 6; Walthamstoy, 1,093; Wandsworth, 250; Welshpool, 60; Wigston Magna, 56; Wimbledon, 176; Woking, 72.

Rural.—Banbury, 14 houses; Bedford, 18; Beverley, 4; Biggleswade, 6; Bumpstead, 18; Chipping Sodbury, 12; Clare, 4; Cockermouth, 8; Crediton, 12; Crowmarsh, 6; Darlington, 6; Grantham, 12; Hardingstone, 2; Hartley Wintney, 46; Hitchin, 14; Hoxne, 4; Lexden and Winstree, 10; Oswestry, 120; Ripon, 8; Rugby, 40; St. Ives, 22; Stow-on-the-Wold, 8; Tavistock, 12; Tendring, 8; Tonbridge, 46; Uckfield, 10; Uxbridge, 96; Walsingham, 8; Ware, 18; Williton, 8; Wincanton, 38; Winchcombe, 12; Wycombe, 8. County Councils.—Hertford, 1; Huntingdon, 4.

STANDARD SPECIFICATION FOR COTTAGES OF TIMBER CONSTRUCTION.

THE following specification has been prepared by the Ministry of Health for use by local authorities and public utility societies in connection with State-aided schemes under Part III of the Housing of the Working Classes Act, 1890. Every scheme for the construction of cottages in timber which has not yet gone to tender, or is not at the date of issue of this specification on the point of going to tender, shall comply with the Standard Form of Specification. It is drafted so as to cover various alternatives, and should be adapted to suit the particular circumstances of each scheme. The Minister will not be prepared to approve schemes which show deviations from the Standard specification, except in so far as he agrees that the deviations are desirable on account of local circumstances and conditions. The specification is to be adapted to local conditions and to the requirements of the particular works by alterations made in red ink and initialled by the architect.

SPECIFICATION OF WORKS TO BE EXECUTED AND MATERIALS TO BE PROVIDED FOR THE ERECTION AND COMPLETION OF COTTAGES.

This Specification with the drawings of the respective types of Cottages forms part of the Contract between
and

1. *Preliminaries.*—The work to be done under this specification is intended to include all the general work preparatory to its execution; for the compliance by the Contractor with all the conditions of the contract; for the plant, scaffolding, tools, and sheds; proper and sufficient protective works; notices, licences, and fees; for fire, workmen and other insurances; necessary conveniences for workmen; regular clearance of rubbish; and for all other matters necessary for the completion of the several works satisfactorily to the true intent and meaning of the drawings and this specification. Adequate latrine accommodation is to be provided and kept in a proper sanitary condition. Clear away the latrines and soil whenever necessary, and make good at completion all work disturbed by the erection of these conveniences. Provide the water necessary for the use of the works. Provide all necessary appliances for keeping the trenches and excavations free from water during the execution of the works. Provide the necessary watchman for the protection of the works, and such lighting as may be found necessary. Provide any protection around the site that may be necessary for the public safety and for the protection of the works. Attend upon, cut away for, and make good after all Trades in all Trades. Protect and keep free from damage due to the operations under the contract, all fences, paths, trees, shrubs, greens, and other surfaces about the buildings or approaches thereto which are required to be maintained.

Excavator and Concrete.

2. *Surface Soil.*—Carefully remove and preserve any turf and stack where directed. Remove the vegetable earth or other surface soil to the depth required under the houses, and deposit the material in separate heaps for use or for clearing away eventually, and clear away what is not needed. All excavation is to be disposed of on the site.

3. *Trench Digging.*—Excavate below the foregoing level for the trenches required for the foundations to all the walls, piers, chimney breasts and other work indicated on the drawings to the lengths, widths, and depths shown, or to greater depths should the earth at the levels indicated not be sufficiently solid for a good foundation. Level the bottoms of the trenches for the concrete.

4. *Strutting and Planking.*—Strut and plank all excavations wherever necessary.

5. *Filling in.*—Fill in and ram the best of the excavated earth about the foundation of walls, &c. and deposit or clear away the surplus as required.

6. *Consolidate Earth.*—Well level, ram and consolidate the earth below all floors and pavings, concrete, &c. All trench bottoms are to be inspected and approved by the Architect before any concrete is laid therein.

7. *Cement.*—The Portland cement is to be of approved manufacture of a quality which complies with the requirements of the current specification adopted by the British Engineering Standards Committee, slow setting quality to be used generally.

8. *Gauging Concrete, Mortar, &c.*—Provide the necessary boxes for accurately measuring the ingredients for concrete, mortar, plastering, &c. All gauging and mixing is to be performed on proper wooden platforms.

9. *Aggregate for Concrete.*—The aggregate for concrete is to be composed of hard bricks free from lime mortar, stone, gravel, or other approved material broken to various sizes, but all to pass through a 1½ in. ring, with sufficient clean river or pit sand to fill up all interstices.

10. *Concrete in Trenches.*—For the foundations of all walls, piers, chimney breasts, &c., concrete of the sections shown on the plans, and composed of one part by measure of cement to eight parts by measure of the aggregate and sand, is to be laid in the trenches and carefully levelled to receive the damp course and wall for subcill. Provide the necessary shuttering and stakes to ensure an even finish where the concrete projects above the level of the ground, draw stakes and remove shuttering at completion. The materials are to be well mixed in small quantities by turning over with a rake and shovel until the colour of the cement is distributed over the aggregate, and then with a due proportion of water, which is to be applied through a rose, and the concrete so prepared is to be at once deposited into the trenches and well consolidated.

11. *Foundations.*—Excavate for and lay Portland cement concrete foundations, as described, those to external and party walls to be 12 in. wide and of depth shown on drawings, the concrete to extend at least 6 in. beyond the face of all piers and chimney stacks. The bottom concrete is to be not less than 9 in. below the level of the finished ground outside the houses. The bottoms of all concrete foundations to walls must in all cases go at least 6 in. into the virgin soil, except where the foundation is in shale, chalk, rock or other ground of a like nature, when the bottom of the concrete can commence directly either of these materials is met with.

12. *Surface Concrete.*—Lay over the whole surface of the buildings a bed not less than 4 in. thick of Portland cement concrete similarly composed to that described for the trenches, levelled and prepared where necessary to receive such other floors and pavings thereon as may be specified.

13. *Granolithic Paving, &c.*—The floors in scullery, w.c., e.c., coal store, larder, and back lobby, and all hearths are to be finished with a 1 in. thickness of cement and either limestone or granite chippings (two of cement to five of the material used) brought up to a hard, smooth, trowelled surface and kept damp for seven days after laying. If the wood flooring is to be laid without joists the upper part of the surface concrete may be of approved crushed clinker concrete two inches thick screeded to receive the wood floor and separated from the under bed of ballast concrete by an approved bituminous damp-proof sheeting. The boards are to be secured without the use of wood fillets.

Outside Paths and Pavings.

14. *Paths and Paving in Yards.*—All pavings, gravel or ash paths are to be carefully laid to fall towards approved drainage courses. Excavate for and form the back garden paths with 3 in. of ashes well rolled in. Excavate for and form the front path up to entrance doorway, also the paved portion at back of houses, with tar paving 2 in. thick of macadam, slag, granite or other similar clean material broken to pass a 1 in. mesh and containing a proper proportion of fine material, and hot pitch and tar well mixed together and punned into position and well rolled. Finish with ½ in. layer of similar materials to pass a ¼ in. mesh, well rolled and finally sprinkled with white stone or spar chips, and again rolled. The ½ in. finishing coat is to be executed just before the houses are handed over ready for occupation. The tar paving is to be laid upon 3 in. of ashes well rolled in. Provide and fix at edge of tar paving 1½ in. by 4 in. creosoted fir sawn edging, secured with 1½ in. by 1½ in. creosoted stakes 2 ft. long, pointed and driven into the ground at 4 ft. centres, or other suitable approved edging. The front path may be formed of cobbles, rough stone paving, or other suitable material.

Drainage.

15. *Soil Drain Pipes.*—The pipes for soil drains are to be "British Standard," and to comply with the British Standard Specification No. 65 for salt-glazed ware pipes, with socket joints and all necessary bends and junctions, laid in straight runs, and to even and regular falls on a bed of Portland cement concrete (1 to 8), as described for foundations, 4 in. thick, and to be benched up at each side to top of pipe with similar concrete. Pipes under building are to be surrounded with similar concrete 4 in. thick. Pipes are to be laid not less than 18 in. deep below the surface of gardens and 12 in. deep below pavings. The joints of pipes are to be caulked with gaskin and jointed in Portland cement and sand in equal proportions, and the inside of pipes is to be carefully cleaned out so as to leave a perfectly clear and unobstructed waterway.

16. *Rainwater Drains.*—The pipes for rainwater drains are to be "British Standard," and to comply with the British Standard Specification No. 65 for salt-glazed ware pipes, laid as above, but without concrete.

17. *Falls.*—The soil and rainwater drains are to be laid to even and regular falls of not less than 2 in. in 10 ft.

18. *Filling.*—In filling in the trench after the drains are laid and tested, great care is to be exercised so as not to disturb the drains, and the finest and best of the excavated material is to be used for packing around the pipes. The whole is to be carefully and thoroughly consolidated and rammed, and any depressions in the finished surface over drains made up.

19. *Cleaning Eyes.*—Form cleaning eyes where required on drains with sloping length of 4 in. salt-glazed ware drainpipe carried up to surface of ground, and finished with salt-glazed ware stopper bedded in cart grease and sand in end of pipe. Surround end of pipe with cement concrete 6 in. thick, and cover the cleaning eye with 2 in. cast concrete slab, 15 in. by 15 in.

20. *Gullies.*—Provide and set where necessary to take surface water, and at feet of rainwater pipes, bath and sink wastes, 4 in. salt-glazed ware trapped reversible gullies, with rebated top, and 6 in. by 6 in. heavy cast iron grating. Bed and surround the gullies with Portland cement concrete and joint to drain. Provide and fix at side of gullies taking sink waste 4 in. salt-glazed open channel 2 ft. long, discharging over gully and set in cement concrete not less than 6 in. thick. Form brick or Portland cement concrete curb around all gullies (except surface water gullies), and finish in Portland cement and sand, gauged 1 and 3, with rounded top, and render the wall of house next gully with cement and sand 9 in. high. Finish with return and arris at top, and continue the curb around the open channel of gullies taking sink wastes.

21. *Manholes.*—Build manholes in the positions required by the local authority, and of 2 ft. 3 in. by 1 ft. 10½ in. minimum size, with 4½ in. brick sides to those 3 ft. deep and 9 in. brick sides to those exceeding 3 ft. deep, in cement mortar upon Portland cement concrete bottom 4 in. thick, the bottom benched up with steep falls to channels in fine Portland cement concrete, and the bottom and sides rendered watertight in cement and sand.

Provide approved cast-iron coated manhole cover and frame, 18 in. by 18 in., 24 in. by 18 in., or 24 in. by 24 in. clear opening as required, bed the frame in cement and the cover in cart grease and sand. Provide 4 in. cast Portland cement concrete surround, finished in 1 in. granolithic on top, as previously described, to take cover. Provide and bed in cement in bottom of manhole salt-glazed ware half round main channel pipes, and similar three-quarter round branch channel bends. Manholes over 3 ft. deep are to have cast-iron coated step-irons built into side 18 in. apart.

22. *Intercepting Trap.*—Provide and build into side of manhole nearest the sewer an approved salt-glazed ware intercepting trap, with cleaning arm and stopper bedded in cart grease and sand, and bed trap on and surround with Portland cement concrete and connect to drain. Provide and fix galvanised iron lever and chain to the stopper, the chain fixed to wall of manhole just under the cover with a stout staple.

23. *Ventilating Pipe and Fresh-Air Inlet.*—Provide and fix at upper end of drainage system 3½ in. diameter cast iron coated ventilating pipe, as hereafter described in Plumber. Provide and fix in a protected position near the front manhole an approved fresh-air inlet, formed by carrying up a drain connected to manhole 6 in. above level of ground, with a bend on the end, and bed same in Portland cement concrete, benched up and rendered smooth, and fix in the end of the bend a galvanised cast iron grating set in cement.

24. *Connections to sewers.*—Where new roads are in course of construction, or are about to be constructed, the connection to the sewer in road is to be made before the footpaths and roadways are completed.

25. *Testing.*—No length of drain is to be covered in until it has been tested and passed. The whole of the soil drainage system is to be tested again at completion with water, smoke, or other test to the satisfaction of the local authority, and is to be well flushed out at completion of works. For the purpose of adjustment of accounts the Contractor is required to fill in the prices in the following schedule. For 4 in. soil drains as specified 2 ft. deep and under per ft. run. For 4 in. soil drains as specified 4 ft. deep and under per ft. run. For 4 in. soil drains as specified 6 ft. deep and under per ft. run. For manholes as specified 2 ft. deep to bottom of concrete and under per manhole. For manholes as specified 4 ft. deep to bottom of concrete and under per manhole. For manholes as specified 6 ft. deep to bottom of concrete and under per manhole.

Fencing.

26. *Fences and gates.*—Construct the fences at front, back, sides and between houses with three rows of No. 8 gauge galvanised iron wire, well strained and fixed through holes in concrete posts, and secured to the end posts with ½ in. diameter galvanised iron eye bolts passing through holes in the post and with nuts and washers. The posts are to be 4 in. by 3 in. tapered reinforced concrete posts 3 ft. high above ground, with the exposed surfaces perfectly clean and smooth, let into ground 18 ins. deep and shaped at top. The reinforcement is to be kept ½ in. back from the finished surfaces of posts. The end and corner posts, where taking full strain of the wires, are to be 4 ins. by 4 ins. and to have reinforced concrete struts, and the feet of posts and struts are to be set in Portland cement concrete 18 in. by 18 in. by 18 in. The entrance gates and the gates in the back fences are to be wrot iron or oak of approved simple design, with latch and heavy catch bolted to the concrete post, and hung on stout wrot iron rides with nuts and washers and passing through holes in the gateposts. The gateposts are to be 4 in. by 4 in. reinforced concrete posts, shaped at top, 4 ft. high above ground, let into ground 2 ft. deep. The gateposts are to have sunk holes so that the nuts of bolts do not project. The feet of gateposts are to be set in Portland cement concrete 18 in. by 18 in. by 18 in. Other kinds of fencing, if not of greater cost and equal durability, can be used in place of the foregoing. Dividing walls, or close boarded fences, 6 ft. high and 5 ft. projection, are to be put at back of houses where there are no outbuildings which would serve as a screen.

Bricklayer.

27. *Bricks.*—The whole of the building bricks used are to be good, hard, well burnt, common bricks. Where London stocks can be obtained, approved grizzles or place bricks may be used for party walls and internal walls carrying no weight. Approved old bricks, where available, may also be used.

28. *Lime Mortar.*—The lime mortar is to be composed of one part of blue lias lump lime and three parts of clean, sharp river or pit sand, or one part of stone lump lime and two parts of sand, and should the lime be ground before use the proportions are to be four and one and three and one respectively.

29. *Cement Mortar.*—The cement mortar is to be composed of one part by measure of Portland cement to four parts by measure of clean, sharp sand, and when mixed is to be used immediately. No cement mortar that has commenced to set is to be knocked up again.

30. *Mortar Mill.*—Where a mortar mill is used, the proportion of sand shall not be less than one-third of the aggregate.

31. *Brickwork.*—The whole of the party walls, piers and chimneys are to be built of the lengths, heights and thicknesses shown on the drawings, well flushed up in Portland cement or lime mortar, and the cross joints filled in solidly; the work is to be carried up to even heights all round, and no part is to rise more than scaffold height above any adjoining work.

32. *Arches.*—All arches are to be segmental or semi-circular half-brick rings set in cement mortar. Brick on edge-flat arches may be used to openings not exceeding 4 ft. wide with ½ in. camber.

33. *Pointing.*—All the joints of brickwork are to be well filled in, flushed up, and neatly weather struck, where exposed as facings, as the work proceeds when the weather permits.

34. *Work in Cement.*—The party walls and the chimney stacks, where they rise above the levels of the roof coverings, are to be built in cement mortar. The outer casings to flues above roof are to be 4½ in. thick.

35. *Party Wall Gables.*—The party wall gables or divisions in roofs are to be 9 in. thick, stepped and finished on top with at least 3 in. clinker concrete carefully brought up to the line of the roof slope for nailing roof coverings to without the use of battens, for protection from fire.

36. *Sleeper Walls.*—Where there are wooden joists to the ground floors, build 4½ in. honeycomb sleeper walls and 4½ in. solid brick fender walls. The walls may be constructed in concrete, with necessary openings for ventilation.

37. *Dampcourses.*—Lay on all walls, piers, chimney breasts, sleeper and fender walls, &c., a dampcourse the full thicknesses of walls, formed of two courses of stout slates breaking joint, set in cement mortar gauged three and one; or an approved pure bitumen dampcourse well lapped and set upon a bed floated to receive the same may be used. Slate dampcourses are to be laid in all the chimney stacks where necessary at the point where they rise above roofs.

38. *Flues and Chimney Heads.*—Build the necessary corbelling over the breasts and stacks, form all chimney flues of the sizes shown, which are in no case to be straight or less than 9 in. by 9 in., with as easy bends and turns as possible, and properly gather and parge the flues as the work proceeds, and core at completion. The chimney stacks where so shown are to have projecting courses at their heads, and each flue is to be finished with a chimney pot set and well flaunched up in cement mortar.

39. *Chimney Openings.*—Build in kitchen range opening 2 in. by ½ in. cambered and caulked iron chimney bars 18 in. longer than the opening and turn one ring arches over them and at all fireplace apertures, and carefully gather in the flues immediately above the openings. Concrete lintels may be built in instead of arches or bars.

40. *Concrete Hearths.*—Where indicated on drawings prepare for a "Serve All" or other approved range by forming a concrete hearth 4 in. thick, finished hard and smooth with 1 in. granolithic paving, and make a smokeproof connection to the brick flue from the iron flue pipe of the range. Form similar concrete and granolithic hearths to other fireplaces on ground floor. Concrete hearths 3 in. thick, finished with 1 in. granolithic paving, are to be set generally upon fillets nailed to the upper floor joists. No timbers or plugs are to be inserted within 6 in. of any flue.

41. *Trimmer Arches.*—Where concrete hearths are not used, 4½ in. brick trimmer arches are to be turned between the timbering on proper springing fillets, and filled in solidly with cement concrete to receive the 1 in. granolithic paving.

42. *Stoves, &c.*—Fix and bed solid all stoves, ranges, mantelpieces, &c., provided, and make good all round after fixing; provide and build in firebricks in all flues where exposed to flames.

43. *Mantel to Range.*—The mantel to range may be formed in cement, slate, stone, or brick, with wood shelf over.

44. *Rendering.*—Roughly render the faces of brickwork or walling over smoke flues passing through floors, ceilings, and in roof spaces with cement mortar.

45. *Copper.*—Provide and fix in the positions indicated on the plans independent eight to twelve gallons rustless iron pans, with furnaces for gas or other fuel, with iron flue pipes and bends to connect with brick flues above.

46. *Air Gratings.*—Provide and fix two 9 in. by 6 in. air gratings in the external walls for each larder and c.c. and for each w.c., and one 12 in. by 9 in. air grating is to be built in for each bedroom having no fireplace. Proper cased flues for same are to formed through the wood framework.

47. *Ventilation under Floors.*—Where wood floors on joists are used on the ground floor, a through current of air is to be provided through every space so covered by 9 in. by 3 in. air gratings, to be provided where shown on plan. Where any part of the building has a solid floor, then through ventilation is to be provided to the spaces under joisted floors by 4 in. socketed drainpipes connected to a flue and air brick built in the external wall.

48. *Sink.*—Provide and fix a standard-pattern Belfast or London sink with waste and trap in each scullery, set in cement mortar on two 4 in. drainpipes, solidly filled up with concrete in front and resting on two brick corbels at back.

49. *Steps.*—Set in cement all stone, brick, tile or granolithic concrete steps; the steps in each case are to be finished 2 in. above the levels of the doors at the front door, but level with the pavings of lobbies and sculleries and in similar positions.

50. *Alternative Construction for Internal Partitions.*—Build the partitions where indicated on the drawings with 2 in. or other approved slabs set in cement mortar and properly secured to the external framework.

(To be continued.)

Non-Ferrous Materials.

The following particulars are published of the stocks (exclusive of old metal and scrap) in this country of soft pig lead and refined spelter in the possession of the Minister of Munitions on March 1:—Soft pig lead, 40,435 tons; refined spelter, 7,299 tons. A proportion of the above stock is already sold to the trade for forward delivery. As the stocks of virgin non-ferrous metals unsold under the control of the Government have now reached such proportions that they cease to be an important factor in the general stocks of such metals held in the United Kingdom, it is proposed to discontinue publication of these notices.

STANDARD SPECIFICATION FOR COTTAGES OF TIMBER CONSTRUCTION.

THE following specification has been prepared by the Ministry of Health for use by local authorities and public utility societies in connection with State-aided schemes under Part III of the Housing of the Working Classes Act, 1890. Every scheme for the construction of cottages in timber which has not yet gone to tender, or is not at the date of issue of this specification on the point of going to tender, shall comply with the Standard Form of Specification. It is drafted so as to cover various alternatives, and should be adapted to suit the particular circumstances of each scheme. The Minister will not be prepared to approve schemes which show deviations from the Standard specification, except in so far as he agrees that the deviations are desirable on account of local circumstances and conditions. The specification is to be adapted to local conditions and to the requirements of the particular works by alterations made in red ink and initialled by the architect.

SPECIFICATION OF WORKS TO BE EXECUTED AND MATERIALS TO BE PROVIDED FOR THE ERECTION AND COMPLETION OF COTTAGES.

This Specification with the drawings of the respective types of Cottages forms part of the Contract between
and

1. *Preliminaries.*—The work to be done under this specification is intended to include all the general work preparatory to its execution; for the compliance by the Contractor with all the conditions of the contract; for the plant, scaffolding, tools, and sheds; proper and sufficient protective works; notices, licences, and fees; for fire, workmen and other insurances; necessary conveniences for workmen; regular clearance of rubbish; and for all other matters necessary for the completion of the several works satisfactorily to the true intent and meaning of the drawings and this specification. Adequate latrine accommodation is to be provided and kept in a proper sanitary condition. Clear away the latrines and soil whenever necessary, and make good at completion all work disturbed by the erection of these conveniences. Provide the water necessary for the use of the works. Provide all necessary appliances for keeping the trenches and excavations free from water during the execution of the works. Provide the necessary watchman for the protection of the works, and such lighting as may be found necessary. Provide any protection around the site that may be necessary for the public safety and for the protection of the works. Attend upon, cut away for, and make good after all Trades in all Trades. Protect and keep free from damage due to the operations under the contract, all fences, paths, trees, shrubs, greens, and other surfaces about the buildings or approaches thereto which are required to be maintained.

Excavator and Concrete.

2. *Surface Soil.*—Carefully remove and preserve any turf and stack where directed. Remove the vegetable earth or other surface soil to the depth required under the houses, and deposit the material in separate heaps for use or for clearing away eventually, and clear away what is not needed. All excavation is to be disposed of on the site.

3. *Trench Digging.*—Excavate below the foregoing level for the trenches required for the foundations to all the walls, piers, chimney breasts and other work indicated on the drawings to the lengths, widths, and depths shown, or to greater depths should the earth at the levels indicated not be sufficiently solid for a good foundation. Level the bottoms of the trenches for the concrete.

4. *Strutting and Planking.*—Strut and plank all excavations wherever necessary.

5. *Filling in.*—Fill in and ram the best of the excavated earth about the foundation of walls, &c. and deposit or clear away the surplus as required.

6. *Consolidate Earth.*—Well level, ram and consolidate the earth below all floors and pavings, concrete, &c. All trench bottoms are to be inspected and approved by the Architect before any concrete is laid therein.

7. *Cement.*—The Portland cement is to be of approved manufacture of a quality which complies with the requirements of the current specification adopted by the British Engineering Standards Committee, slow setting quality to be used generally.

8. *Gauging Concrete, Mortar, &c.*—Provide the necessary boxes for accurately measuring the ingredients for concrete, mortar, plastering, &c. All gauging and mixing is to be performed on proper wooden platforms.

9. *Aggregate for Concrete.*—The aggregate for concrete is to be composed of hard bricks free from lime mortar, stone, gravel, or other approved material broken to various sizes, but all to pass through a 1½ in. ring, with sufficient clean river or pit sand to fill up all interstices.

10. *Concrete in Trenches.*—For the foundations of all walls, piers, chimney breasts, &c., concrete of the sections shown on the plans, and composed of one part by measure of cement to eight parts by measure of the aggregate and sand, is to be laid in the trenches and carefully levelled to receive the damp course and wall for subcill. Provide the necessary shuttering and stakes to ensure an even finish where the concrete projects above the level of the ground, draw stakes and remove shuttering at completion. The materials are to be well mixed in small quantities by turning over with a rake and shovel until the colour of the cement is distributed over the aggregate, and then with a due proportion of water, which is to be applied through a rose, and the concrete so prepared is to be at once deposited into the trenches and well consolidated.

11. *Foundations.*—Excavate for and lay Portland cement concrete foundations, as described, those to external and party walls to be 12 in. wide and of depth shown on drawings, the concrete to extend at least 6 in. beyond the face of all piers and chimney stacks. The bottom concrete is to be not less than 9 in. below the level of the finished ground outside the houses. The bottoms of all concrete foundations to walls must in all cases go at least 6 in. into the virgin soil, except where the foundation is in shale, chalk, rock or other ground of a like nature, when the bottom of the concrete can commence directly either of these materials is met with.

12. *Surface Concrete.*—Lay over the whole surface of the buildings a bed not less than 4 in. thick of Portland cement concrete similarly composed to that described for the trenches, levelled and prepared where necessary to receive such other floors and pavings thereon as may be specified.

13. *Granolithic Paving, &c.*—The floors in scullery, w.c., e.c., coal store, larder, and back lobby, and all hearths are to be finished with a 1 in. thickness of cement and either limestone or granite chippings (two of cement to five of the material used) brought up to a hard, smooth, trowelled surface and kept damp for seven days after laying. If the wood flooring is to be laid without joists the upper part of the surface concrete may be of approved crushed clinker concrete two inches thick screeded to receive the wood floor and separated from the under bed of ballast concrete by an approved bituminous damp-proof sheeting. The boards are to be secured without the use of wood fillets.

Outside Paths and Pavings.

14. *Paths and Paving in Yards.*—All pavings, gravel or ash paths are to be carefully laid to fall towards approved drainage courses. Excavate for and form the back garden paths with 3 in. of ashes well rolled in. Excavate for and form the front path up to entrance doorway, also the paved portion at back of houses, with tar paving 2 in. thick of macadam, slag, granite or other similar clean material broken to pass a 1 in. mesh and containing a proper proportion of fine material, and hot pitch and tar well mixed together and punned into position and well rolled. Finish with ½ in. layer of similar materials to pass a ¼ in. mesh, well rolled and finally sprinkled with white stone or spar chips, and again rolled. The ½ in. finishing coat is to be executed just before the houses are handed over ready for occupation. The tar paving is to be laid upon 3 in. of ashes well rolled in. Provide and fix at edge of tar paving 1½ in. by 4 in. creosoted fir sawn edging, secured with 1½ in. by 1½ in. creosoted stakes 2 ft. long, pointed and driven into the ground at 4 ft. centres, or other suitable approved edging. The front path may be formed of cobbles, rough stone paving, or other suitable material.

Drainage.

15. *Soil Drain Pipes.*—The pipes for soil drains are to be "British Standard," and to comply with the British Standard Specification No. 65 for salt-glazed ware pipes, with socket joints and all necessary bends and junctions, laid in straight runs, and to even and regular falls on a bed of Portland cement concrete (1 to 8), as described for foundations, 4 in. thick, and to be benched up at each side to top of pipe with similar concrete. Pipes under building are to be surrounded with similar concrete 4 in. thick. Pipes are to be laid not less than 18 in. deep below the surface of gardens and 12 in. deep below pavings. The joints of pipes are to be caulked with gaskin and jointed in Portland cement and sand in equal proportions, and the inside of pipes is to be carefully cleaned out so as to leave a perfectly clear and unobstructed waterway.

16. *Rainwater Drains.*—The pipes for rainwater drains are to be "'British Standard," and to comply with the British Standard Specification No. 65 for salt-glazed ware pipes, laid as above, but without concrete.

17. *Falls.*—The soil and rainwater drains are to be laid to even and regular falls of not less than 2 in. in 10 ft.

18. *Filling.*—In filling in the trench after the drains are laid and tested, great care is to be exercised so as not to disturb the drains, and the finest and best of the excavated material is to be used for packing around the pipes. The whole is to be carefully and thoroughly consolidated and rammed, and any depressions in the finished surface over drains made up.

19. *Cleaning Eyes.*—Form cleaning eyes where required on drains with sloping length of 4 in. salt-glazed ware drainpipe carried up to surface of ground, and finished with salt-glazed ware stopper bedded in cart grease and sand in end of pipe. Surround end of pipe with cement concrete 6 in. thick, and cover the cleaning eye with 2 in. cast concrete slab, 15 in. by 15 in.

20. *Gullies.*—Provide and set where necessary to take surface water, and at feet of rainwater pipes, bath and sink wastes, 4 in. salt-glazed ware trapped reversible gullies, with rebated top, and 6 in. by 6 in. heavy cast iron grating. Bed and surround the gullies with Portland cement concrete and joint to drain. Provide and fix at side of gullies taking sink waste 4 in. salt-glazed open channel 2 ft. long, discharging over gully and set in cement concrete not less than 6 in. thick. Form brick or Portland cement concrete curb around all gullies (except surface water gullies), and finish in Portland cement and sand, gauged 1 and 3, with rounded top, and render the wall of house next gully with cement and sand 9 in. high. Finish with return and arris at top, and continue the curb around the open channel of gullies taking sink wastes.

21. *Manholes.*—Build manholes in the positions required by the local authority, and of 2 ft. 3 in. by 1 ft. 10½ in. minimum size, with 4½ in. brick sides to those 3 ft. deep and 9 in. brick sides to those exceeding 3 ft. deep, in cement mortar upon Portland cement concrete bottom 4 in. thick, the bottom benched up with steep falls to channels in fine Portland cement concrete, and the bottom and sides rendered watertight in cement and sand.

Provide approved cast-iron coated manhole cover and frame, 18 in. by 18 in., 24 in. by 18 in., or 24 in. by 24 in. clear opening as required, bed the frame in cement and the cover in cart grease and sand. Provide 4 in. cast Portland cement concrete surround, finished in 1 in. granolithic on top, as previously described, to take cover. Provide and bed in cement in bottom of manhole salt-glazed ware half round main channel pipes, and similar three-quarter round branch channel bends. Manholes over 3 ft. deep are to have cast-iron coated step-irons built into side 18 in. apart.

22. *Intercepting Trap.*—Provide and build into side of manhole nearest the sewer an approved salt-glazed ware intercepting trap, with cleaning arm and stopper bedded in cart grease and sand, and bed trap on and surround with Portland cement concrete and connect to drain. Provide and fix galvanised iron lever and chain to the stopper, the chain fixed to wall of manhole just under the cover with a stout staple.

23. *Ventilating Pipe and Fresh-Air Inlet.*—Provide and fix at upper end of drainage system 3½ in. diameter cast iron coated ventilating pipe, as hereafter described in Plumber. Provide and fix in a protected position near the front manhole an approved fresh-air inlet, formed by carrying up a drain connected to manhole 6 in. above level of ground, with a bend on the end, and bed same in Portland cement concrete, benched up and rendered smooth, and fix in the end of the bend a galvanised cast iron grating set in cement.

24. *Connections to sewers.*—Where new roads are in course of construction, or are about to be constructed, the connection to the sewer in road is to be made before the footpaths and roadways are completed.

25. *Testing.*—No length of drain is to be covered in until it has been tested and passed. The whole of the soil drainage system is to be tested again at completion with water, smoke, or other test to the satisfaction of the local authority, and is to be well flushed out at completion of works. For the purpose of adjustment of accounts the Contractor is required to fill in the prices in the following schedule. For 4 in. soil drains as specified 2 ft. deep and under per ft. run. For 4 in. soil drains as specified 4 ft. deep and under per ft. run. For 4 in. soil drains as specified 6 ft. deep and under per ft. run. For manholes as specified 2 ft. deep to bottom of concrete and under per manhole. For manholes as specified 4 ft. deep to bottom of concrete and under per manhole. For manholes as specified 6 ft. deep to bottom of concrete and under per manhole.

Fencing.

26. *Fences and gates.*—Construct the fences at front, back, sides and between houses with three rows of No. 8 gauge galvanised iron wire, well strained and fixed through holes in concrete posts, and secured to the end posts with ¼ in. diameter galvanised iron eye bolts passing through holes in the post and with nuts and washers. The posts are to be 4 in. by 3 in. tapered reinforced concrete posts 3 ft. high above ground, with the exposed surfaces perfectly clean and smooth, let into ground 18 ins. deep and shaped at top. The reinforcement is to be kept ½ in. back from the finished surfaces of posts. The end and corner posts, where taking full strain of the wires, are to be 4 ins. by 4 ins. and to have reinforced concrete struts, and the feet of posts and struts are to be set in Portland cement concrete 18 in. by 18 in. by 18 in. The entrance gates and the gates in the back fences are to be wrot iron or oak of approved simple design, with latch and heavy catch bolted to the concrete post, and hung on stout wrot iron rides with nuts and washers and passing through holes in the gateposts. The gateposts are to be 4 in. by 4 in. reinforced concrete posts, shaped at top, 4 ft. high above ground, let into ground 2 ft. deep. The gateposts are to have sunk holes so that the nuts of bolts do not project. The feet of gateposts are to be set in Portland cement concrete 18 in. by 18 in. by 18 in. Other kinds of fencing, if not of greater cost and equal durability, can be used in place of the foregoing. Dividing walls, or close boarded fences, 6 ft. high and 5 ft. projection, are to be put at back of houses where there are no outbuildings which would serve as a screen.

Bricklayer.

27. *Bricks.*—The whole of the building bricks used are to be good, hard, well burnt, common bricks. Where London stocks can be obtained, approved grizzles or place bricks may be used for party walls and internal walls carrying no weight. Approved old bricks, where available, may also be used.

28. *Lime Mortar.*—The lime mortar is to be composed of one part of blue lias lump lime and three parts of clean, sharp river or pit sand, or one part of stone lump lime and two parts of sand, and should the lime be ground before use the proportions are to be four and one and three and one respectively.

29. *Cement Mortar.*—The cement mortar is to be composed of one part by measure of Portland cement to four parts by measure of clean, sharp sand, and when mixed is to be used immediately. No cement mortar that has commenced to set is to be knocked up again.

30. *Mortar Mill.*—Where a mortar mill is used, the proportion of sand shall not be less than one-third of the aggregate.

31. *Brickwork.*—The whole of the party walls, piers and chimneys are to be built of the lengths, heights and thicknesses shown on the drawings, well flushed up in Portland cement or lime mortar, and the cross joints filled in solidly; the work is to be carried up to even heights all round, and no part is to rise more than scaffold height above any adjoining work.

32. *Arches.*—All arches are to be segmental or semi-circular half-brick rings set in cement mortar. Brick on edge-flat arches may be used to openings not exceeding 4 ft. wide with ½ in. camber.

33. *Pointing.*—All the joints of brickwork are to be well filled in, flushed up, and neatly weather struck, where exposed as facings, as the work proceeds when the weather permits.

34. *Work in Cement.*—The party walls and the chimney stacks, where they rise above the levels of the roof coverings, are to be built in cement mortar. The outer casings to flues above roof are to be 4½ in. thick.

35. *Party Wall Gables.*—The party wall gables or divisions in roofs are to be 9 in. thick, stepped and finished on top with at least 3 in. clinker concrete carefully brought up to the line of the roof slope for nailing roof coverings to without the use of battens, for protection from fire.

36. *Sleeper Walls.*—Where there are wooden joists to the ground floors, build 4½ in. honeycomb sleeper walls and 4½ in. solid brick fender walls. The walls may be constructed in concrete, with necessary openings for ventilation.

37. *Dampcourses.*—Lay on all walls, piers, chimney breasts, sleeper and fender walls, &c., a dampcourse the full thicknesses of walls, formed of two courses of stout slates breaking joint, set in cement mortar gauged three and one; or an approved pure bitumen dampcourse well lapped and set upon a bed floated to receive the same may be used. Slate dampcourses are to be laid in all the chimney stacks where necessary at the point where they rise above roofs.

38. *Flues and Chimney Heads.*—Build the necessary corbelling over the breasts and stacks, form all chimney flues of the sizes shown, which are in no case to be straight or less than 9 in. by 9 in., with as easy bends and turns as possible, and properly gather and parge the flues as the work proceeds, and core at completion. The chimney stacks where so shown are to have projecting courses at their heads, and each flue is to be finished with a chimney pot set and well flaunched up in cement mortar.

39. *Chimney Openings.*—Build in kitchen range opening 2 in. by ½ in. cambered and caulked iron chimney bars 18 in. longer than the opening and turn one ring arches over them and at all fireplace apertures, and carefully gather in the flues immediately above the openings. Concrete lintels may be built in instead of arches or bars.

40. *Concrete Hearths.*—Where indicated on drawings prepare for a "Serve All" or other approved range by forming a concrete hearth 4 in. thick, finished hard and smooth with 1 in. granolithic paving, and make a smokeproof connection to the brick flue from the iron flue pipe of the range. Form similar concrete and granolithic hearths to other fireplaces on ground floor. Concrete hearths 3 in. thick, finished with 1 in. granolithic paving, are to be set generally upon fillets nailed to the upper floor joists. No timbers or plugs are to be inserted within 6 in. of any flue.

41. *Trimmer Arches.*—Where concrete hearths are not used, 4½ in. brick trimmer arches are to be turned between the timbering on proper springing fillets, and filled in solidly with cement concrete to receive the 1 in. granolithic paving.

42. *Stoves, &c.*—Fix and bed solid all stoves, ranges, mantelpieces, &c., provided, and make good all round after fixing; provide and build in firebricks in all flues where exposed to flames.

43. *Mantel to Range.*—The mantel to range may be formed in cement, slate, stone, or brick, with wood shelf over.

44. *Rendering.*—Roughly render the faces of brickwork or walling over smoke flues passing through floors, ceilings, and in roof spaces with cement mortar.

45. *Copper.*—Provide and fix in the positions indicated on the plans independent eight to twelve gallons rustless iron pans, with furnaces for gas or other fuel, with iron flue pipes and bends to connect with brick flues above.

46. *Air Gratings.*—Provide and fix two 9 in. by 6 in. air gratings in the external walls for each larder and c.c. and for each w.c., and one 12 in. by 9 in. air grating is to be built in for each bedroom having no fireplace. Proper cased flues for same are to formed through the wood framework.

47. *Ventilation under Floors.*—Where wood floors on joists are used on the ground floor, a through current of air is to be provided through every space so covered by 9 in. by 3 in. air gratings, to be provided where shown on plan. Where any part of the building has a solid floor, then through ventilation is to be provided to the spaces under joisted floors by 4 in. socketed drainpipes connected to a flue and air brick built in the external wall.

48. *Sink.*—Provide and fix a standard-pattern Belfast or London sink with waste and trap in each scullery, set in cement mortar on two 4 in. drainpipes, solidly filled up with concrete in front and resting on two brick corbels at back.

49. *Steps.*—Set in cement all stone, brick, tile or granolithic concrete steps; the steps in each case are to be finished 2 in. above the levels of the doors at the front door, but level with the pavings of lobbies and sculleries and in similar positions.

50. *Alternative Construction for Internal Partitions.*—Build the partitions where indicated on the drawings with 2 in. or other approved slabs set in cement mortar and properly secured to the external framework.

(*To be continued.*)

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THE BUILDING TRADE.

THE INSTITUTE OF BUILDERS.

The thirty-sixth annual general meeting of the Institute of Builders was held at 48, Bedford-square, W.C., on March 10, Mr. Edmond J. Hill, retiring President, in the chair.

Annual Report.

The Building Code.—The annual report of the Council, which was presented to the meeting and adopted, referring to the proposed National Building Code, stated that in older forms of contract the architect occupied a position of absolute authority; in later forms that position underwent a change, inasmuch as his absolute authority was limited to a few special cases. Under the new building Code that process had been carried to its logical conclusion and the position frankly accepted that there were only two parties to a contract, viz., the contractor and the building owner, and that the architect was the agent of the latter. The principle of mutual responsibility as between the parties to the contract was sought to be maintained throughout and their respective duties were more clearly set out than had hitherto been the case.

The thanks of the Institute are due to Mr. E. J. Hill, Mr. E. J. Brown and Mr. Walter Lawrence for services rendered in connection with the preparation of a form of contract for use in connection with Government housing schemes, and also, in the case of the two former gentlemen, for their services on the Contracts and Specification Committee appointed by the Minister of Health to advise on these matters.

Provincial Branches.—Provision has been made for setting up Provincial Branches of the Institute, and the first Provincial Branch has now been inaugurated at Manchester. The Council hopes that this example will be followed elsewhere, and that a large number of such branches will be established during 1920.

Awards for Apprentices.—Upon the initiative of the late Mr. W. J. Renshaw, a scheme for providing apprenticeship awards was sent to the Joint Building Trades' Apprenticeship Committee (London), which has approved the scheme with a slight amendment and it is understood the scheme has been re-circulated for the consideration of representatives of trade unions on that Committee, after which it will be reconsidered.

Prizes Offered by the Institute.—In response to the request of the City and Guilds of London Institute, asking the Institute to authorise the Department again to announce the prizes and medals for next year on the same terms as before, it was decided to accede to the request.

Grant from the Institute Benevolent Funds.—The following grant has been made during the past year:—The Builders' Benevolent Institution, £50.

Obituary.—The Council regrets to record the loss through death of three well-known and highly-esteemed members, namely: Mr. Wm. Shepherd, of London; Mr. J. W. White, C.B.E., of Sunderland; and Mr. W. J. Renshaw, of London.

Election of Officers.

The following officers were elected for the coming year:—

President: Mr. S. Smethurst, J.P.

Vice-Presidents: Messrs. F. Shingleton, M.V.O., Jas. Storrs, J.P., F. J. Gayer, and H. Willock.

Treasurer: Mr. E. J. Hill.

Members of Council: Messrs. A. H. Adamson, G. M. Burt, Jno. Croad, A. B. Falkner, R. J. Holliday, H. T. Holloway, F. M. May, G. H. Parker, R. B. Chessum, H. P. Shepherd, F. Woods, S. Easten, A. J. Forsdike, W. Moffat, F. Thorne, F. R. Rider, A. B. H. Colls, H. Matthews.

Inaugural Address.

Mr. Smethurst, in his inaugural address, after referring to the losses sustained by the Institute during the past year, in the death of Mr. Wm. Shepherd (Past-President), Mr. W. J. Renshaw and Mr. J. W. White, O.B.E., said it was to be hoped that during the year provincial branches would be established in suitable and convenient centres all over Great Britain and Ireland. He was looking forward to the greatest good coming both to the craft and the nation through this development. It would emphasise the need for organising for the development of that side of their life as builders which dealt with the more elevating side of their craft, leaving the merely commercial side to the National Federation of Builders. He did not, however, wish to deprecate the right commercial attitude being observed by the builder. This in its place was most important. The Institute stood for honourable business and good craftsmanship, and the aim of its members should be in every way possible to promote this. Good building had to do with good architecture, and of all the arts architecture was the one that affected most, for good or evil, the lives of the people. It was with them always. "A thing of beauty is a joy for ever," and a well-proportioned building, properly accordant with its surroundings, was always ministering to a finer taste in the public. The history of a nation was often written in its buildings. The restraint and dignity of the old Georgian houses in Bedford-square, in common with a great many others in Bloomsbury, were to him a real joy and pleasure to see, and they were a standing reproach to much of the merely meretricious architecture of the Victorian era.

The function of the Institute was to educate its members to an understanding and appreciation of the best in architecture and craftsmanship. Men often proclaimed with much pride, and based upon it a claim for recognition, the fact that building was the second largest industry in the country. He would claim its importance as being due not to mere numbers, but to the quality of the work it was engaged upon. He had no hesitation in saying it was more interesting than any other vocation. It was free from the monotony which characterised other callings, for every day brought new duties and new problems to solve, especially to the master builder who lived in contact with his work.

He looked to the new provincial branches seeking a close alliance with the architects on one side and the more intelligent operatives on the other; together they could discuss problems they were mutually interested in, and that, better than anything he knew, would recreate the spirit of the old Guilds. Modern advocates of the Guild system seemed to be more concerned with a more equitable division of the earnings of industry than they should be. Any way, their proposals in this respect were always impracticable, and any attempt to apply them at present must result in absolute and unqualified failure. In the summer visits might jointly be made to buildings of note both ancient and modern, with explanations from those best informed on the matters under consideration. From afternoons spent in such a way there would be real pleasure and profit to all.

He imagined that each branch would take a very real interest in encouraging the youths coming into the trade as apprentices by offering prizes for proficiency and doing all they could to encourage the true spirit of craftsmanship, and probably offering recognition and distinction through a scheme yet to be formulated for those young men who by ability and good conduct earned them. The Education Committee of the Joint Industrial Council for the Building Trade had prepared, for submission to the adherent bodies to that Council, a scheme for dealing with the training of boys coming into the industry, which had received the unanimous approval of the Council, and he had little doubt but that it would receive the support of a great majority of the adherent bodies. If it did and the scheme was carried out in a proper spirit, they would have laid the foundation for a great and good future for the industry.

PROFESSIONAL EDUCATION

At the last meeting of the Auctioneers' and Estate Agents' Institute, Sir William Wells read a paper on professional education, in the course of which he said that although a certain educational standard had been set up, dependent upon the passing of certain examinations, there had until now been no attempt to provide for that other part of professional training which was difficult to define but which had been a dominant characteristic in the training associated with the older professions. It was that indescribable influence which the universities and colleges had been able to impress on the professional classes in the past. To create this atmosphere, by the educational methods to be adopted in the coming generation, should be as important an aim as that of supplying the requisite standard of knowledge. The most desirable course to this end appeared to be for educational facilities to be so arranged as to enable a student to acquire a theoretical knowledge at the same time as he obtained his practical training. To this end, the Institute had formed a College of Estate Management. If the fullest benefit was to be obtained from such an institution, free technical education must be provided for those who, in consequence of the war, could not afford to pay for it, and also for students of exceptional ability. In addition, the College must do everything within its power to encourage intercourse among the students, by the formation of sports clubs, &c.

APPRENTICES IN THE BUILDING TRADE.

The question of attracting apprentices to the building trade was raised in the House of Commons last week by Lieut.-Colonel W. Guinness. The Minister of Labour (Sir Robert Horne) stated that the Industrial Council for the Building Trade presented an interim report in which it stated that there still existed a considerable discrepancy between the number of apprentices who might be engaged under the joint working agreement between the unions and the employers and the number who were so employed. The Council suggested that an appeal should be made to employers to employ the full quota of apprentices and to provide them with such intensive training as would speedily make them of economic value to the industry. The Report was receiving consideration. Mr. J. Davidson, a Labour member, said that the Secretary of the building operatives' union had offered to provide the whole of the labour necessary for the building of the houses year by year. Lieut.-Colonel Guinness said that an apprentice could not live on what he earned, and unless the Government prepared a comprehensive scheme it was impossible to make up the shortage. Sir R. Horne, in reply, said a scheme already existed under which the Government made up the pay of apprentices for this particular purpose to within a shilling or two of a journeyman's pay.

THE SUPPLY OF BRICKLAYERS

In the House of Commons last week Mr. Charles Edwards asked the Minister of Health whether the number of bricklayers required to erect 200,000 houses each year was 60,000. He suggested that 54,646 were available, and that 24,885 stone masons were on the register last October, making a total of 79,531, thus leaving a margin of 20,000 for other work.

Dr. Addison, in reply, stated that the number of bricklayers required for 200,000 houses per annum had been estimated at between 48,600 and 66,000, but the total number of bricklayers in England and Wales was 50,993, and it would be seen that there was no margin for any other work whatever. The number of masons in England and Wales was 18,712.

THE UNEMPLOYED INSURANCE BILL.

SUFFICIENT attention seems hardly to have been given to the Unemployed Insurance Bill which was introduced by the Government at the end of last month, when Sir R. Horne made a most interesting statement in connection with the scheme. Under the Act of 1911 an experimental beginning was made with certain industries which are especially liable to periods of unemployment, including the building, shipbuilding and engineering industries, which covered some 2,500,000 employees, of whom about 9,000 were women. The contribution was 2½d. per week, a like sum from the employers, and the State paid one-third of the joint contributions, the benefit being 7s. a week, one week's benefit for every five contributions. At the time this scheme was inaugurated, the actuarial calculation for the figure of unemployment for which risk had to be taken was about 8.6 per cent. The scheme was extended during the war to munition workers and persons working in metal and chemical industries, bringing the number up to about 4,000,000.

Before the war the actual figure of unemployment was 4 per cent. At the beginning of the war it fell to 3 per cent., and at the end of the war it was under 1 per cent. This led to funds being accumulated, and in December last out of these funds the benefit was raised to 11s. Since the scheme came into force £1,380,000 has been distributed as benefit; and administrative expenses have amounted to some £700,000.

This is a brief summary of the statement made by Sir R. Horne as to the existing system of insurance against unemployment. The new Bill includes 12,000,000 workpeople, but does not embrace agricultural workers, domestic servants, employees of local authorities, railway servants, police and non-manual workers with over £250 a year. The contributions would be for each man 3d. (an increase of but a halfpenny over the old scheme), and employers will pay 3d. and the State 2d., i.e., one-third of the joint contribution. Women are to pay 2½d., as before; boys, 2d.; girls, 1½d.

The benefits are to be 15s. for men, 12s. for women, 7s. 6d. for boys, and 6s. for girls, with one week's benefit for every six contributions. The scheme is to be contributory, and is to be applied to industry as a whole, and not to each industry separately; but it contains provisions enabling industries to contract out. In the case of industries contracting out the Government contribution would be less, that is, instead of paying one-third the Government would contribute 10 per cent. of the joint contribution, which is six-tenths of a penny instead of 2d.

One point is not quite clear in the Minister's speech as reported, for it was stated that it would be possible to set up schemes of supplementary insurance; for instance, the building trade might set up supplementary insurance for unemployment owing to weather conditions, "and in that way could add to the amount of benefit which they could derive from the Government scheme." In the report it is not stated how extra benefit could be derived.

These are the main provisions in the Bill, but we shall refer to the subject again when the Bill itself can be seen. Labour as a whole must welcome a scheme which tends to relieve the working classes from the spectre which is truly said to haunt them—the fear of unemployment—and a beginning must be made on not too ambitious a scale. In such uncertain times a gradual advance must be made. As is apparent from experience in connection with the 1911 scheme the financial success of such a scheme depends upon the conditions prevailing in the country. The war, for instance, by absorbing the manhood of the country prevented unemployment and caused funds to accumulate. This should not be lost sight of; money is not the only contribution to the scheme. Increased trade, absence of disputes, increased output, may all lessen unemployment, and thus increase insurance funds to be used in bad times.

This Bill is an extension of a scheme tentatively introduced in 1911, and it may itself prove capable of being expanded. In the meanwhile it provides mitigation for the hardships which unemployment causes in times of real distress.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers	Plasterers' Labourers.
Aberdare	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Accrington	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§		1/5½§–1/6½	
Altrincham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Ashton-under-Lyne	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Barnsley	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/6½§	1/6½§	1/6½§
Barrow-in-Furness	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Barry	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Bath	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2½§	1/4½	1/4½
Bedford	1/6½§	1/6½§	1/6½§	1/6½§	1/6½§	1/6½§	1/6½§	1/3½§	1/3½§	1/3½§
Birkenhead	2/–§	2/–§	2/–§	2/–§	2/–§	2/–§	2/–§	1/3½§	1/4½§	1/4½§
Birmingham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½
Bishop Auckland	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Blackburn	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§		1/5½§–1/6½	
Blackpool	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§		1/5½§–1/6½	
Bolton	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Bournemouth	1/–§	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/2½§	1/2½§	1/2½§
Bradford	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8§	1/8§	1/8§
Bridgwater	1/4§	1/4§	1/4§	1/4§	1/4§	1/4§	1/4§	1/2§	1/2§	1/2§
Brighton	1/6§	1/6§	1/6§	1/6§	1/6§	1/6§	1/5§	1/3§	1/3§	1/3§
Bristol	1/10§	1/10§	1/10§	1/10§	1/10§	1/10§	1/10§	1/7½§	1/7½§	1/7½§
Burnley	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§		1/5½§–1/6§	
Burton-on-Trent	1/–§	1/7§	1/–§	1/7§	1/7§	1/7§	1/6§	1/4§	1/4§	1/4§
Bury	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Cambridge	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/5½§	1/3½§	1/3½§	1/3½§
Cardiff	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Chatham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Cheltenham	1/4§	1/4§	1/4§	1/4§	1/4§	1/4§	1/3§	1/1§	1/1§	1/1§
Chesterfield	1/8½§	1/8½§	1/8½§	1/8½§	1/8½§	1/8½§	1/8½§	1/6½§	1/6½§	1/6½§
Chester	1/9½	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§		1/5½§–1/6§	
Chesterfield	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/6½§
Colchester	11	11§	11§	1/–	11	1/–	9§	5§	8§	8§
Coventry	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10§	1/8§	1/8§	1/8§
Crewe	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½		1/3½–1/3½§	
Darlington	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8§	1/8§	1/8§
Derby	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/6½§
Doncaster	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/6½§	1/6½§	1/6½§
Dudley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4§	1/4§	1/4§
Durham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½‡
East Glam. and Mon. Valleys	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Exeter	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/2½	1/2½	1/2½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/1½	1/1½	1/1½
Gloucester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½§	1/3½§	1/3½§
Grantham	1/7½	1/7½	1/7½	1/–§	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Grays	1/11½§	1/11½§	1/11½§	1/11½§	1/11½§	2/–§	1/10½§	1/8½	1/8½	1/8½
Grimsby	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Great Yarmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/3½	1/2½	1/2½	1/2½
Guildford	1/6½	1/6½	1/6½	1/6½	1/6½	1/7½	1/5½	1/3½	1/3½	1/3½
Halifax	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Harrogate	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/6½§	1/6½§	1/6½§
Hartlepools	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Hastings	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Hereford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½§	1/3½§	1/3½§
Huddersfield	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Hull	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Ipswich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/4½§	1/3½	1/3½	1/3½
Lancaster	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§		1/5½§–1/6§	
Leamington Spa	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4§	1/4§	1/4§
Leeds	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Leicester	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Lincoln	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Liverpool	2/–§	2/–§	2/–§	2/–§	2/–§	2/–§	2/–§	1/8½§	1/8½§	1/8½§
Llanelly	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
London	1/11½§	1/11½§	1/11½§	1/11½§	—	2/0§	1/10½§	1/8½	1/8½‡	1/8½
Loughborough	1/9½	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/6½§
Luton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/5½	1/5½	1/5½
Maidstone	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Manchester	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Mansfield	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/6½§
Merthyr Tydfil	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Middlesbrough	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Newcastle-on-Tyne	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Newport, Mon.	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Northampton	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/6½§
Norwich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/2½	1/2½	1/2½
Nottingham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Oldham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Oxford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4§	1/2½	1/2½	1/2½
Plymouth	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/5½§	1/5½§	1/5½§
Pontypridd	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Portsmouth	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½§	1/3½§	1/3½§
Preston	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§		1/5½§–1/6§	
Reading	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Rochdale	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Rochester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Rugby	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/7§
St. Albans	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/3½§	1/3½§	1/3½§
St. Helen's	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Scarborough	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/6½§	1/6½§	1/6½§
Sheffield	1/11½	1/11½	1/11½	1/11½	1/9½§	2/–§	1/8½	1/6½§	1/6½§	1/6½§
Shrewsbury	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/6½§
Southampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½§	1/3½§	1/3½§
Southend-on-Sea	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½§	1/6½§	1/6½§
Southport	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§		1/5½§–1/6§	
South Shields	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Stockport	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Stockton-on-Tees	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Stoke-on-Trent	1/8½	1/8½	1/8½	1/8½	1/8½	1/9½	1/8½	1/5½	1/5½	1/5½
Stroud	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½§	1/3½§	1/3½§	1/3½§
Sunderland	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Swansea	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Taunton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½§	1/3½§	1/3½§
Torquay	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/3½§	1/3½§	1/3½§
Wakefield	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Walsall	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/6½§
Warrington	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
West Bromwich	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Wigan	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½		1/7½–1/7½§	
Windsor	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4§	1/4§	1/4§
Wolverhampton	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/8½§	1/6½§	1/6½§	1/6½§
Worcester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6§	1/4§	1/4§	1/4§
York	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/9½§	1/6½§	1/6½§	1/6½§

The Masons' rate given is for bankers; fixers usually ½d. per hour extra. * War bonus of 2s. per week granted. † War bonus of 2s. per week granted. ‡ War bonus of 2s. 6d. per week granted. §§ War bonus of 4s. per week granted. ¶ War bonus of 7s. 6d. per week granted. ‖ War bonus of 5s. per week granted. § These rates include the 12½ per cent. bonus. [The above rates, unless otherwise shown, are exclusive of 12½ per cent. bonus.—ED.]

COMPETITIONS, CONTRACTS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts iv; Competitions iv; Public Appointments lvi; Sales by Auction lxi. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where, quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

MARCH 20. — **Barrow-in-Furness.**— HOUSES.—Erection of 113 houses for the C.B., Borough Engineer and Surveyor, Town Hall, Barrow.

MARCH 20. — **Egham.** — HOUSES.—Sixteen houses for the U.D.C. Mr. W. Menzies, F.S.I., architect, Englefield Green, Surrey.

MARCH 20. — **London, E. (East Ham).**— HOUSES.—108 houses under the Housing, Town Planning, &c. Act, 1919, for the County Borough. Mr. J. Birch, Borough Surveyor, Town Hall, East Ham, E. 6.

MARCH 20.—**Newmarket.**—HOUSES.—Erection of 30 houses at King Edward-road, Newmarket, for the U.D.C. Mr. L. E. Cole, Architect, Rutland-chambers, Newmarket.

MARCH 20.—**Ruislip.**—HOUSES.—Twenty houses for the T.C. Mr. T. R. Swales, Borough Engineer Municipal Offices, Maldon.

MARCH 20.—**Stevenage.**—HOUSES.—Twenty cottages for the U.D.C. Clerk of Council, Council Offices, Stevenage. Deposit £2 2s.

MARCH 20. — **West Sussex.**— COTTAGES.—Erection of 33 cottages for the C.C. Mr. Haydn P. Roberts F.R.I.B.A., County Architect, Thurloe-House, Worthing.

MARCH 22.—**Arreton.**—VILLAGE HALL.—Erection of village hall and clubroom at Arreton. Mr. H. M. R. Moore, hon. secretary, Rose Cottage, Arreton, Isle of Wight.

MARCH 22.—**Aviemore.**—COTTAGES.—Erection of cottages. Messrs. A. Ross & Sons, architects, Inverness.

MARCH 22.—**Bradford.**—LAUNDRY EXTENSIONS.—For extensions to laundry, for the Board of Guardians. Messrs. Connon & Chorley, 3, Park Place, Leeds.

MARCH 22.—**Bridlington.**—HOUSE.—Erection of residence for Mr. C. G. Southcott. Mr. M. B. Parkin, architect, Belvedere-parade, Bridlington.

MARCH 22.—**Chelmsford.**—PAINTING.—For painting gas holders, &c., for the T.C. Gas Engineer, Springfield, Chelmsford.

MARCH 22.—**Chilcompton.**—HOUSING.—Erection of 20 houses at Chilcompton, for the Clutton R.D.C. Messrs. Petter & Warren, architects, 7, Handford, Yeovil.

MARCH 22.—**Clutton.**—HOUSES.—Erection of 16 houses at Compton Martin, for the R.D.C. Messrs. Thomas & Morgan, architects, 23, Galliwastrad-road, Pontypridd.

MARCH 22.—**Darfield.**—HUT.—Removal, erection and adaptation of hut at Council School, for the West Riding E.C. Acting architect, County Hall, Wakefield.

MARCH 22.—**Edinburgh.**—VARIOUS.—For cleaning and glazing of windows of schools for the Education Authority. Education Offices, Castle-terrace, Edinburgh.

MARCH 22.—**Folkestone.**—HOUSES.—Erection of 24 houses for the T.C. Mr. A. E. Nichols, borough engineer, Municipal Offices, Folkestone. Deposit £3 3s.

MARCH 22.—**Gools.**—HUT.—Erection and adaptation of hut at Pasture-road Council School, for the West Riding E.C. Acting Educational architect, County Hall, Wakefield.

MARCH 22.—**Haltwhistle.**—HOUSES.—Erection of 35 houses and construction of roads and sewers at Plenmeller and erection of 42 houses with roads, &c., at Gilsland, for the R.D.C. Mr. R. C. Hastewell, Architect, The Grange, Haltwhistle. Deposit £2 2s.

*MARCH 22.—**Hoo.**—HOUSES.—122 in surrounding district, for the R.D.C. Mr. E. J. Hammond, 21, Balmoral-road, Gillingham, Kent.

MARCH 22.—**Huddersfield.**—HOME.—Erection of nurses home at the Infirmary, for the B.G. Messrs Stocks & Sykes, architects, 1, St. Peter-street, Huddersfield.

MARCH 22. — **Lewisham.**— HOUSES.—Erection and completion of the third and 4th sections of the houses to be erected on the Lewisham Park site, for the Metropolitan Borough. Borough Surveyor, Town Hall, Catford.

MARCH 22.—**Marlborough.**—HOUSES.—Erection of 16 houses for the T.C. Borough Engineer, Town Hall, Marlborough.

MARCH 22.—**Nuneaton.**—HOUSES.—Erection of 18 houses for the T.C. Mr. R. C. Moon, borough engineer, Municipal Offices, Nuneaton. Deposit £2 2s.

MARCH 22.—**Orsett.**—HOUSES.—Erection and completion of 26 houses for the R.D.C. James Beck, Averley Council House, Essex. Deposit £2 2s.

MARCH 22.—**Paisley Bridge.**—HUT.—Adaptation of sectional hut at Council School. Acting Education architect, County Hall, Wakefield.

MARCH 22.—**Plymouth.**—PAINTING.—Exterior painting at Hospital. Mr. C. Lintern, Clerk, Mental Hospital, Blackadon, Ivybridge.

MARCH 22.—**Rawmarsh.**—HUT.—Erection of hut at Ashwood-road Council School, for the West Riding E.C. Acting Educational architect, County Hall, Wakefield.

MARCH 22.—**Salford.**—171 houses on land adjoining Littleton-road, Lower Kersal, Salford, for the C.B.

MARCH 22.—**West Harptree.**—HOUSES.—Erection of six houses for the Clutton R.D.C. Messrs. Thomas & Morgan, 23, Galliwastad-road, Pontypridd.

MARCH 23.—**Ilford.**—HOUSES.—Erection of 100 ouses at Horns-road, Barkingside, for the U.D.C. Mr. H. Shaw, surveyor, Town Hall, Ilford. Deposit £2 2s.

MARCH 23.—**Oldham.**—HOUSES.—Erection of 42 houses for the T.C. Mr. J. J. Williams, Town Clerk, Town Hall, Oldham. Deposit £1.

MARCH 23.—**West Riding of Yorkshire.**—COTTAGES, &c.—Four pairs of cottages and four homesteads at Coversall, one homestead at Aldborough, and two homesteads at Gargrave, for the West Riding C.C. Architect, Small Holdings Committee, County Hall, Wakefield. Deposit £1 each contract.

MARCH 24.—**Edinburgh.**—PAINTING.—For painting work in connection with Gorgie Housing Scheme for the T.C. Mr. J. H. Williamson, City Architect, Public Works Office, Edinburgh.

MARCH 24.—**Petersfield.**—PAINTING, &c.—For painting, repairs, &c., at Poor Law Institution, for the B.G. Mr. D. A. Thomas, sanitary surveyor, 13, High-street, Petersfield. Deposit £1 1s.

MARCH 24.—**Wellington.**—HOUSES.—Erection of 50 houses at Hadley, for the R.D.C. Mr. R. Blakenay Phillips, Egbaston House, Wellington, Salop. Deposit £2 2s.

*MARCH 25.—**Ashford, Kent.**—HOUSES.—Block of four for the New Romney Borough. Mr. Edwin A. Jackson, North-street, Ashford, Kent.

MARCH 25.—**Dorchester.**—HOUSES.—Six houses at Frome Vauchurch for the R.D.C. Mr. F. T. Maltby, architect, Dorchester. Deposit £2 2s.

MARCH 25.—**Llandaff.**—HOUSES.—10 houses at Radyn, for the R.D.C. Mr. J. Holden, Park House, 20, Park lane, Cardiff. Deposit £3 3s.

MARCH 25. — **London, N. (Islington).**— FLATS.—Erection of four blocks of flats (30 in all) at Hazelville-road site, Upper Holloway and erection of one block at and addition to and conversion of No. 9, Warltersville-road, Crouch Hill, (20 flats in all). Mr. E. C. P. Mason, F.R.I.B.A., F.S.I., Finsbury-pavement House, London, E.C.

MARCH 25.—**North Petherwin.**—HOUSES, &c.—Two semi-detached houses and two sets of outbuildings at Troosele Farm, for the Devon C.C. Messrs. D. Ward & Sons, 11, The Crescent, Plymouth.

MARCH 25.—**Nottingham.**—HOUSES.—Erection of eighteen houses on Wells-road site for the T.C. Mr. W. V. Betts, architect, Bank Chambers, Basford, Nottingham. Deposit £1 1s.

*MARCH 25.—**St. Albans.**—BUSINESS PREMISES.—Erection of at St. Albans, for Messrs. Thomas Oakley & Co., Ltd. Percival C. Blow, architect, 7, London-road, St. Albans.

MARCH 25.—**Southtawton.**—ALTERATIONS.—Alterations and additions to cottages and outbuildings at East Week Farm, for the Devon C.C. Messrs. D. Ward & Son, 11, The Crescent, Plymouth.

MARCH 25.—**Tendring.**—HOUSES.—Six houses at Little Oakley, for the R.D.C. Mr. G. Rowbottom, Architect, The Moorings, Felixstowe. Deposit £1 1s.

MARCH 26.—**Wilmslow.**—HOUSES.—Erection of 36 houses for the U.D.C. Messrs. Halliday Paterson & Agate.

MARCH 27.—**Cardiff.**—RENOVATION.—Internal renovations at Ely Lodge, for the Board of Guardians. Mr. A. J. Harris, clerk, 11, Park Place, Cardiff.

MARCH 27.—**Edinburgh.**—WORKS.—Mason's, plasterer's, painter's, slater's, &c., work for the Corporation. City Architect, City Chambers, Edinburgh

MARCH 27.—**Edinburgh.**— RECONSTRUCTION. — Reconstruction of 15, King's Stables-road, for the T.C. Mr. J. A. Williamson, A.R.I.B.A., Public Works Offices, Edinburgh.

MARCH 27. — **Farnham.**— HOUSES.—Erection of 26 houses at Lawday House, Weybourne and Badshot Lea, for the U.D.C. Harold Falkner, Esq., 24, West-street, Farnham.

MARCH 27.— **Stoke-on-Trent** —SHEDDING, &c.— Erection of shedding, fencing, &c., in connection with Exhibition of Staffordshire Agricultural Society Mr. H. H. Garlick, Secretary, Eccleshall, Staffordshire.

*MARCH 27.—**Waltham Abbey.**—WAR MEMORIAL.—Erection of. Messrs. Tooley & Foster, architects, Buckhurst Hill, Essex.

MARCH 29.—**Dagenham.**—HOUSES, &c.—The L.C.C. invites tenders, upon a cost plus profit basis, for the development of its new housing estate at Dagenham, Essex. The work comprises: (*a*) Construction of arterial and development roads, sewers, bridges, and other works incidental to the lay-out of an estate of approximately 3,000 acres; (*b*) the erection of approximately 24,000 houses and such administrative buildings as may hereafter be determined. Architect to the Council, County Hall, S.E. 1.

MARCH 29.—**Edinburgh.**—ALTERATIONS.—For alterations at Old Normal School, for the T.C. Mr. J. A. Williamson, city architect, Public Works, Offices, Edinburgh.

MARCH 29.— **Margate.**— HOUSES.—Erection of 70 houses of various types for the Borough. Mr. W. R. H. Gardner, Architect, 12, Grosvenor-place, Margate.

MARCH 29.— **Runcorn.**— HOUSES.— Erection of 58 houses of various types for the R.D.C. Messrs Wright & Hamlyn, Sankey-street Chambers, Warrington.

MARCH 29.—**Runcorn.**—HOUSES.—Erection of 16 houses for the U.D.C. Mr. A. P. Harcourt, architect, Town Hall, Runcorn. Deposit £2 2s.

*MARCH 29.—**St. Marylebone.**—ALTERATIONS.—Certain alterations in the Workhouses in Northumberland-street, W., for the Guardians. Mr. A. Saxon Snell, F.R.I.B.A., 9, Bentinck-street, W. 1.

MARCH 29.—**Teignmouth.**—Foundation work and housing of gas plant for the U.D.C. Mr. H. Higham, gas engineer, Gas Works, Teignmouth.

MARCH 29.—**Torquay.**—ALTERATIONS.—For alterations and extensions of premises for Messrs. W. H. Smith & Son. Messrs. Watson & Watson, architects, 36, Torwood-street, Torquay. Deposit £3 3s.

MARCH 29. — **Westhampnett.**— HOUSES.—Erection of 24 houses on separate sites for the R.D.C. Mr. John Dovaston, A.R.I.B.A., Council's Architect, Plaiant House, Chichester.

MARCH 29.—**Wigan.**—HOUSES.—Erection of 135 houses for the T.C. Mr. R. B. Donald, borough engineer, Wigan. Deposit £2 2s.

MARCH 30. — **Edinburgh.** — TRAINING DEPOT. — Various trades required in connection with extension of motor garage at training depot of the T.C. Mr. J. A. Williamson, city architect, Public Works Office, Edinburgh.

MARCH 30.—**Guildford.**—124 houses at Guildford Park, for the Borough.

MARCH 30.—**Loughton.**—50 houses on the Habgood Estate for the U.D.C.

MARCH 30.—**Lymington.**—COTTAGES.—Erection of six cottages at Pilley for R.D.C. Mr. W. Ravenscroft, architect, Brientcroft, Milford-on-Sea.

*MARCH 30.—**Yeovil.**—HOUSES, STREET SEWERS.—Erection of 99 houses (whole or any number) construction of street, sewer and drainage works. Messrs. Petter & Warren, 74, Handford, Yeovil.

*MARCH 31.—**Epsom.** — COTTAGES. — Erection of 12 at Lumley-road, Cheam, Surrey, for the R.D.C. Mr. A. W. Tribe, architect, Denison House, Westminster.

*MARCH 31.—**Oswestry.**—HOUSES.—Erection of 50 houses on Llwyn-road site, for the Borough. Messrs. Butler, M.S.A., & Lewis, 76, Broughton-road, Handsworth, Birmingham

MARCH 31. — **Rhiwbina.**—HOUSES.—Erection of 92 houses for the Cardiff Workers Co-operative Garden Village Society, Ltd. Mr. T. Alwyn Lloyd, L.R.I.B.A., M.T.P.I., 32, Park-place, Cardiff.

MARCH 31. — **Sevenoaks.**—HOUSES.—Erection of 12 houses for the R.D.C. Mr. P. F. Potter, 49, London-road, Sevenoaks.

MARCH 31. — **Torquay.** —ALTERATIONS AND EXTENSIONS—to No. 74 and 75, Fleet-street, Torquay, for Messrs, W. H. Smith & Sons. Watson & Watson, architects, 36, Torwood-street, Torquay.

MARCH 31. — **Walton-upon-Thames.** — HOUSES, ROADS, ETC.—Erection of 52 houses, and the construction of roads, sewers and house drainage for the U.D.C. Mr. Percy H. Webb, Clerk to the Council, Council Offices, Walton-upon-Thames.

APRIL 1.—**Galgate.**—ALTERATIONS.—For alteration of building in Stoney-lane, for the Ellel War Memorial Institute Committee. Messrs. J. Webster & B. D. Stuart, Institute, Galgate, Lancaster.

*APRIL 1.—**Mitcham.**—HOUSES, SEWERS, &c.—Laying out and sewering two new streets, and erection of 140 houses for the U.D.C. Mr. Robert M. Chart, F.S.I., M.S.A., Lower Green, Mitcham.

APRIL 3.—**Helensburgh.**—HOUSES.—Erection of 60 houses for the T.C. Mr. J. N. Stirling, burgh surveyor, Helensburgh.

APRIL 5.—**Beverley.**—PAINTING.—For painting at Asylum, for the East Riding Visiting Committee. Mr. C. W. Hobson, clerk, 26, Langate, Beverley.

APRIL 5.—**Gartocsh and Glenboig.**—STATION RECONSTRUCTION.—Reconstruction of Station buildings at Gartoosh and Glenboig for the Caledonian Railway Co. Engineer, Offices, Buchanan-street, Glasgow. Deposit, £2 2s.

APRIL 6.—**Gomersal.**—COTTAGES, &c.—Erection of homestead and two pairs of cottages for the West Riding Small Holdings Committee.—Architect, Small Holdings Committee, County Hall, Wakefield. Deposit £1.

APRIL 7.— **Barnet.**— COTTAGES.— Erection of 24 cottages at Harris-lane, Shenley, with certain sewage disposal and road works, for the R.D.C. Council Offices, Boreham Wood.

*APRIL 7.— **Barnet.** — REPAIRS. — Painting and general repairs to New Infirmary, Wellhouses-lane, Barnet, for the Union. Messrs. Williams & Cox, architects, 34, Henritta-street, Covent Garden, W.C. 2.

*APRIL 7.—**Nottingham.**—HOUSES.—Erection of various lots for the Corporation. Mr. W. A. Kneller, 12, Victoria-street, Nottingham.

APRIL 7.—**Sefton.**—HOUSES.—Erection of 36 houses in various townships for the R.D.C. Mr. E. B. Bailey, architect, 37, Moorfields, Liverpool. Deposit, £1 1s.

*APRIL 7.—**Wallasey.**—HOUSES—Erection of 47 houses (nine blocks of four each, one block of three, and four pairs). Mr. W. H. Travers, borough engineer and surveyor, 18, Falkland-road, Wallasey.

*APRIL 8.—**Cornwall.**—POST OFFICE.—The Commissioners of H.M. Works, etc., invite tenders for the erection of a new Post Office, at St. Anstell, Cornwall, Postmaster, at Austell.

*APRIL 9.—**Lambeth.**—Conversion of separate premises at Nos. 33 and 34, Guildford-road, South Lambeth, into five self-contained flats, for the Metropolitan Borough. Town Clerk, Lambeth Town Hall, Brixton Hill, S.W. 2.

*APRIL 9.—**Staines.**—HOUSES, ROADMAKING, &c.—Erection of 32 houses and for works of road-making, fencing and drainage. Mr. G. W. Manning, architect, London-road, Ashford, Middlesex.

*APRIL 9.—**Woking.**—COTTAGES.—Erection of 59 pairs of cottages of four different types for the U.D.C. The Surveyor, Council Offices, Woking.

*APRIL 10.—**Brentford.**—HOUSES.—Erection of 44 fronting Ealing and Whitestile-road, Brentford. Mr. W. J. W. Westlake, Engineer and Surveyor to the Council, Clifden House, Boston-road, Brentford.

APRIL 12.— **Biggleswade.**— HOUSES.— Erection of 40 houses for the U.D.C. Mr. Thos. Cockrill, Architect, Council Offices, Biggleswade.

APRIL 12.—**Darlington.**—WAGON WORKS.—Erection of wagon building works for the North Eastern Railway Co. Mr. A. Pollard, Company's Architect, at York.

✱APRIL 12.—**East Ashford.**—HOUSES.—Erection of 20 houses for the R.D.C. Clerk to the Council, 7, Bank-street, Ashford, Kent.

✱APRIL 12.—**Southend-on-Sea.**—HOUSES.—Erection of 15 for the Borough, on the Sutton-road site. Mr. Robert H. Dyer, Borough Engineer, Municipal-buildings, Southend-on-Sea.

APRIL 13.—**Keadue.**—HOSPITAL.—For completion of Keadue Hospital, for the Cavan C.C. Mr. W. Finlay, Secretary, Court House, Cavan.

APRIL 15.—**Andover.**—HOUSES.—Erection of 33 houses, with drainage works, &c., for the T.C. Borough Surveyor, Town Hall, Andover. Deposit £1 1s.

✱APRIL 15.—**Winchester.**—ENGINEERS' HOUSE AND 12 COTTAGES.—Erection of, for the employees at Park Prewett Mental Hospital. Messrs. G. T. Hine & Pegg, architects, 35, Parliament-street, Westminster, S.W.1.

✱NO DATE.—**Banbury.**—COTTAGES.—Erection of 10 at Bodicote, near Banbury, Oxon. Mr. T. L. Dale, architect, 6, Horse Fair, Banbury.

NO DATE.—**Leeds.**—CLUB.—Erection of club premises, Vinery View, York-road, Leeds. Mr. F. Mitchell, architect, 9, Upper Fountaine-street, Leeds.

NO DATE.—**Leeds.**—MILL, &c.—Erection of (1) tall factory chimney; (2) boiler house, power house, engine house, &c; and (3) four storey woollen mill at Gildersome, for Messrs. J. Wilson, Ltd. Mr. T. A. Buttery, Architect, Queen-square, Morley.

✱NO DATE.—**Lyons.**—HOTEL.—Erection of hotel in reinforced concrete. Monsieur L'Administrateur délégué de la Société, 10, rue des Marronniers, Lyons.

✱NO DATE.—**Stansted.**—HOUSES.—Erection of 48 houses in various parishes for the R.D.C. Messrs. Sifton & Thorpe, architects, 38, Museum-street, W.C. 1.

NO DATE.—**Whetwell.**—ALTERATIONS.—For alterations and additions to Brk's Farm, Hodthorpe, Whitwell, for the Derbyshire C.C. Messrs. W. H. Wagstaff & Sons, architects, Derby. Deposit £1 1s.

FURNITURE, MATERIALS, etc.

MARCH 19.—**London.**—TOOLS.—Supply of woodworking tools for H.M. Commissioner of Works. Controller of Supplies, H.M. Office of Works, King Charles-street, Westminster, S.W.

MARCH 20.—**Bridgwater.**—ROAD MATERIALS.—Supply of stone and tarmac for the R.D.C. Mr. W. H. Cousins, surveyor, Bridgwater.

MARCH 20.—**Burnley.**—MATERIALS.—Supply of materials for the Highways and Sewerage Committee. Mr. G. H. Pickles, borough engineer, Town Hall, Burnley.

MARCH 20.—**Lymm.**—MATERIALS.—Supply of road materials to the U.D.C. Mr. W. Mullard, Clerk, Council Offices, Lymm.

MARCH 20.—**Riccall.**—ROAD MATERIAL.—Supply of road material to the R.D.C. Mr. J. Townend, clerk, 1, Abbey-place, Selby.

MARCH 22.—**Blyth.**—ROAD MATERIALS.—Supply of road materials to the R.D.C. Mr. A. E. Hewitt, surveyor, 66, Bridge-street, Worksop.

MARCH 22.—**Leeds.**—MATERIALS.—For supply of stone flags, gravestones, grass boards, &c., to the Parks Committee. Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds.

MARCH 22.—**Manchester.**—RAILWAY STORES.—Supply of stores to the Lancashire and Yorkshire Railway Co. Mr. Sharp, Stores Dept., Osborne-street, Manchester.

MARCH 22.—**Warrington.**—MATERIALS.—Supply of concrete slabs and kerbs and slag. Mr. A. M. Ker, Borough Engineer, Warrington.

MARCH 23.—**Halifax.**—MATERIALS.—Supply of materials to the Gas Department of the Corporation. Mr. W. B. MacLuskv, engineer, Gas Department, Halifax.

MARCH 23.—**Rhondda.**—MATERIALS.—Supply of lime fire bricks, oils, &c., for the Gas and Water Dept. of the U.D.C. Mr. O. Thomas, engineer, Pentre, Rhondda.

MARCH 24.—**Burnley.**—MATERIALS.—Road materials pipes, &c., for the R.D.C. Mr. H. Pritchard, surveyor, 14, Nicholas-street, Burnley.

MARCH 24.—**Chorley.**—ROAD MATERIALS.—For road material for the R.D.C. Mr. R. P. Cheale, surveyor, West-street, Lewes.

MARCH 24.—**Ely.**—ROAD MATERIALS.—Granite and gravel for the R.D.C. Mr. F. W. Firby, surveyor, Downham, Isle of Ely.

MARCH 24.—**Kettering.**—ROAD MATERIALS.—Supply of road materials to the R.D.C. Mr. F. W. Stowe, clerk, George-street, Kettering.

MARCH 24.—**Sefton.**—MATERIALS.—Supply of materials for the R.D.C. Mr. F. Pool, surveyor, 21, Evered-avenue, Walton, Liverpool.

MARCH 27.—**Bacup.**—MATERIALS.—Supply of materials to the T.C. Borough Surveyor, Town Hall, Bacup.

MARCH 27.—**Hampton Wick.**—TAR.—Supply of 4,000 gallons of distilled tar. Mr. H. Fawsett, clerk, Council Offices, Hampton Wick.

MARCH 27.—**Kiveton Park.**—ROAD MATERIALS.—Supply of granite and tar macadam for R.D.C. Mr. F. Hewitt, surveyor, Council Offices, Kiveton Park.

MARCH 27.—**Selby.**—ROAD MATERIALS.—For road materials for one year, for the R.D.C. Mr. J. Townend, clerk, Council Offices, Selby.

MARCH 27.—**Waterloo-with-Seaforth.**—MATERIALS.—Year's supply of materials to the U.D.C. Mr. F. Spencer Yates, Surveyor, Town Hall, Waterloo.

MARCH 29.—**Surbiton.**—MATERIALS.—Supply of materials for one year to U.D.C. Surveyor, Council Offices, Ewell-road, Surbiton.

MARCH 29.—**Ticehurst.**—ROAD MATERIALS.—Road material to the R.D.C. Mr. W. E. Bright, surveyor Wadhurst.

MARCH 30.—**Tenterden.**—MATERIALS.—Supply of road material to the R.D.C. Mr. W. L. C. Turner, district surveyor, Tenterden.

MARCH 31.—**Great Crosby.**—MATERIALS.—Supply of materials to the U.D.C. Mr. J. A. Wright, surveyor, Council Offices, Great Crosby.

APRIL 13.—**Leith.**—MATERIALS.—For supply of materials to the T.C. Borough Surveyor Council Chambers, Leith.

ENGINEERING, IRON AND STEEL.

MARCH 20.—**Aberdare.**—TRAMWAYS.—Reconstruction of existing tramways and for new tramways for the U.D.C. Mr. B. M. Lacy, 12, Victoria-street, Westminster, S.W. Deposit £5 5s.

MARCH 20.—**Ashton-in-Makerfield.**—GASHOLDER, &c.—Construction of (a) gasholder; (b) condensers, &c., for the U.D.C. Mr. J. A. Gray, gas engineer, Ashton-in-Makerfield.

MARCH 22.—**Glenboig.**—FOOTBRIDGE.—Erection of footbridge over railway for the Caledonian Railway Co. Engineer's Office, Buchanan-street, Glasgow. Deposit, £2 2s.

MARCH 22.—**Stratford-on-Avon.**—RESERVOIR.—Additions to Bluecap reservoir for the Corporation. Mr. F. W. Jones, borough surveyor, Municipal Offices, Stratford-on-Avon.

MARCH 22.—**Warrington.**—GAS PLANT.—Construction of vertical retort installation, with coal and coke handling plant, for the Corporation. Mr. W. Newbigging, 3, Norfolk-street, Manchester.

MARCH 23.—**Tottenham.**—RAILWAY PLANT.—Supply to the refuse destructor works of portable light railway material for the U.D.C. Capt. H. F. Wilkinson, engineer, Town Hall, Tottenham.

MARCH 24.—**Liverpool and Goole.**—RAILWAY EXTENSIONS.—(1) Extension of Great Howard-street goods yard, Liverpool; and (2) footbridge over sidings, &c., at Goole, for the Lancashire & Yorkshire Railway Co., Engineers' Office, Hunts Bank, Manchester.

MARCH 26.—**Exmouth.**—WATER PIPES.—Supply of 65 tons of cast-iron pipes for the U.D.C. Mr. S. Hutton, engineer, Public Hall, Exmouth.

MARCH 26.—**Farnham.**—LAMP COLUMNS.—For 50 octagonal cast-iron lamp columns, for the U.D.C. Mr. R. W. Cass, surveyor, South-street, Farnham.

MARCH 29.—**Birmingham.**—RESERVOIR.—Construction of covered service reservoir at Yardley Wood, for the Corporation. Mr. E. Antony Lees, Council House, Birmingham. Deposit £5.

MARCH 29.—**East Deen.**—WATERWORKS.—(1) Supply of pipes; (2) supply of valves, &c.; (3) haulage pipes and laying mains: (4) construction of reinforced concrete reservoir, for the R.D.C. Mr. W. Whitehouse, engineer, Cinderford, Gloucestershire. Deposit £2 2s.

MARCH 29.—**Edinburgh.**—STEELWORK.—Provision and erection of structural steelwork on the Portobello generating station. Mr. J. A. Williamson, Public Works Office, Edinburgh.

MARCH 29.—**Teignmouth.**—GAS PLANT.—Installation of Water gas plant for the U.D.C. Mr. H. Higham, gas engineer, Gas Works, Teignmouth.

MARCH 31.—**Salford.**—HEATING.—Refitting hot-water pipes, radiators, &c., at Hope Infirmary, for the B.G. Mr. T. R. Wollaston, Consulting Engineer, 26, Corporation-street, Manchester.

APRIL 1.—**Portadown.**—BRIDGE.—Widening of Portadown River Bridge for the U.D.C. Mr. M. H. W. McCletchey, town clerk, Portadown. Deposit £1 1s.

APRIL 1.—**Prestonpans.**—HEATING.—For installation of heating apparatus in public school, for the Haddingtonshire B.C. Mr. R. D. Robinson, Education Offices, Haddington.

APRIL 7.—**Lochgelly.**—RAILWAY.—Construction of railway line to the housing site for the T.C. Mr. A. Lumsden, burgh surveyor, Lochgelly. Deposit £2 2s.

APRIL 8.—**Manchester.**—CONCRETE CAISSON.—Construction of reinforced concrete caisson at the oil dock, Stanlow, for the Manchester Ship Canal Co. Mr. H. A. Reed, Chief engineer, 41, Spring-gardens, Manchester. Deposit £2 2s.

APRIL 17.—**Banbridge.**—BRIDGE.—Reconstruction of steel bridge over River Bann at Banbridge, for the Great Northern (Ireland) Railway Co. Engineer, Belfast. Deposit. £2 2s.

ROAD, SANITARY, AND WATER WORKS.

MARCH 19.—**Chelmsford.**—GAS MAINS, &c.—Laying of gas mains and the installation of services on Boarded Barns housing estate, for the T.C. Gas Engineer, Gas Works, Springfield, Chelmsford.

MARCH 20.—**Bridlington.**—ROADS.—Making up Marine Drive for the T.C. Lt.-Col. C. G. Bradley, borough surveyor, Bridlington.

MARCH 20.—**Immingham.**—SEWERAGE.—Construction of main sewerage scheme for the Grimsby R.D.C. Mr. A. Hobson, Deansgate, Grimsby. Deposit £1.

MARCH 20.—**Kincardineshire.**—ROADS.—Resurfacing 12 miles of highway for the C.C.—Mr. A. Forbes, county road surveyor, County Buildings, Stonehaven. Deposit £1.

MARCH 20.—**Maldon.**—ROADS, &c.—Roads and sewers for housing site of the T.C. Borough Engineer, Municipal Offices, Maldon.

MARCH 20.—**Maldon.**—WATER MAINS.—Providing and laying 3 in. water main in Cherry Garden-road, for the T.C. Borough Engineer, Municipal Offices, Maldon.

MARCH 20.—**Reigate.**—TAR WASHING.—Tar washing about 380,000 square yards of roads for the T.C. Mr. F. T. Clayton, borough surveyor, Municipal Buildings, Reigate.

MARCH 22.—**Coulsdon.**—SEWER.—Construction of stoneware pipe sewer, &c., for the U.D.C. Mr. R. Chart, surveyor, Council Offices, Purley.

MARCH 22.—**Dudley.**—SEWERS.—Main drainage works on three sites, for the T.C. Mr. V. Turner, borough engineer, Town Hall, Dudley. Deposit £2 2s.

MARCH 22.—**Little Hulton.**—ROADS AND SEWERS.—Construction of street works and sewers in connection with housing scheme. Surveyor, Council Offices, Little Hulton. Deposit £2 2s.

MARCH 22.—**Rothwell.**—ROADS AND SEWERS.—Construction of roads and sewers at Rothwell Haugh, for the U.D.C. Messrs. Jones & Stocks, architects, 56, Prudential Buildings, Leeds. Deposit £1 1s.

MARCH 22.—**Tilbury.**—SEWERAGE, &c.—Sewerage, flood prevention and tidal outfall works, carriageways, &c., in connection with housing scheme, for the U.D.C. Mr. S. A. Hill-Willis, engineer, Council Offices, 47, Dockroad, Tilbury. Deposit, £10 10s.

MARCH 23.—**Ilford.**—ROADS AND SEWERS.—Construction of roads and sewers (a) Chadwell Heath, and (b) Horns-road, for the U.D.C. Mr. H. Shaw, surveyor, surveyor, Town Hall, Ilford. Deposit £2 2s.

MARCH 24.—**Doncaster.**—ROADS AND SEWERS.—Construction of roads, sewers, &c., on Carr House-road Housing site, for the T.C. Mr. R. E. Ford, housing surveyor, 3, Priory-place, Doncaster. Deposit £2 2s.

MARCH 24.—**Kilmarnock.**—ROADS, &c.—For roads, sewers, &c., for the Holehouse-road housing scheme for the T.C. Burgh Surveyor, Kilmarnock.

MARCH 24.—**Manchester.**—ROAD, BRIDGE, &c.—Construction of (1) road railway bridge, dock, (2) steelwork for road and bridge in connection with new generating station at Barton-upon-Irwell, for the Corporation. Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester. Deposit £2 2s.

MARCH 25.—**Lymington.**—ROADS.—Construction of road works, for the T.C. Mr. J. Beirr, surveyor Lymington.

MARCH 27.—**Bicester.**—ROADS.—Construction of road and main drainage work for the U.D.C. housing scheme of 55 houses. Mr. H. W. Smith, 57, High street, Oxford.

MARCH 27.—**Hyde.**—SEWERING.—For sewering Lilly-street for the T.C. Borough Surveyor, Town Hall, Hyde.

MARCH 29.—**Paddington.**—SANITARY.—Collection and removal of house refuse in the Queen's Park District for the B.C. Borough surveyor, Town Hall, Paddington. Charge 2s. 6d.

MARCH 30.—**Eton.**—ROADS.—Re-surfacing carriage way in High-street, for the U.D.C. Mr. J. E. Hattersley, engineer, Council Offices, Eton.

MARCH 30.—**Llanfrechfa.**—ROADS AND SEWERS.—Construction of roads and sewers in connection with housing scheme at Pontnewydd, for the U.D.C. Mr. M. R. Jones, Surveyor, Astley House, Pontnewydd, Mon. Deposit £1 1s.

MARCH 30.—**Otley.**—WATER MAINS.—Supply and laying 1,257 lineal yards of 4 in. cast water mains, &c. for the U.D.C. Mr. C. F. Hodgson, surveyor, Council Offices, Otley. Deposit £1 1s.

✱MARCH 31.—**Aldershot.**—Reconstruction of road (Victoria-road), for the U.D.C. D. Llewellyn Griffiths Muncipal-buildings, Aldershot.

MARCH 31.—**Harrogate.**—ROADS AND SEWERS.—Construction of roads, sewers, &c., in connection with housing scheme. Mr. C. E. Rivers, borough engineer Harrogate.

APRIL 7.—**Greenock.**—WATER WORKS.—Construction of filtered water tank and filter-house, for the T.C. Water Engineer, Municipal Buildings Greenock

APRIL 9.—**Tividale.**—SEWERAGE WORKS.—Construction of settling tank, filter bed, &c., at Tividale, near Dudley, for the Upper Stour Valley Main Sewerage Board. Mr. W. Fiddian, engineer, 7, Church-street, Stourbridge. Deposit, £3 3s.

APRIL 9.—**Turdale.**—SEWERS.—Reconstruction o sewers in Cradley for the Upper Stour Valley Main Sewerage. Mr. W. Fiddian, engineer, 7, Church-street Stourbridge. Deposit, £3 3s.

APRIL 13.—**Romford.**—STREET WORKS.—(a) Wood paving in High-street, &c.; (b) tarred slag macadam roading in London-road, for the U.D.C. Mr. F. G. Beaumont, surveyor, Council Offices, Romford. Deposit £2 2s.

APRIL 15.—**Sutherland.**—ROADS.—For reconstructing roads, for the C.C. Mr. R. Grant, County-road, surveyor, Golspie.

Auction Sales, Tenders, &c.

MARCH 19.—**London, E.**—Messrs. Goddard & Smith will sell at the Millenium Mills, Silvertown, E. 16, plant and building material.

MARCH 23.—**Aston, Shropshire.**—Messrs. Joseph Hibbard & Sons will sell stock of timber.

MARCH 23.—Mr. A. H. Davis will sell, at Manor Mental (L.C.C.) Hospital, Horton Lane, Epsom, huts and materials.

MARCH 23 AND 24.—**London, N.W.**—Tools (in lots to suit small buyers). Allsop & Co., 141, Park Road, Regent's Park, N.W. 8, auctioneers.

MARCH 24 AND 25.—**Sunbury.**—Messrs. Weatherall & Green will sell, by direction of the Disposal Board, Ministry of Munitions, huts, plant and materials.

MARCH 23, 24 AND 25.—**Eastcote, Northants.**—Messrs. Wise & Bowerman will sell by direction of the Disposal Board, Ministry of Munitions, 100 huts, building materials and R.E. stores.

✱MARCH 25.—**Hertford.**—TIMBER.—Messrs. Joseph Hibbard & Sons will sell by Order of the Board of Trade at Perry Wood, Watton, Herts, stock of English timber.

MARCH 24.—**Pontesbury, Shropshire.**—Messrs. J. Hibbard & Sons will sell a stock of timber.

MARCH 25.—**London, N.W.**—Messrs. Dagnalls, Ltd., will sell at Dagnalls Wharf, Metropolitan Railway, Willesden Green, N.W. 2, traction machinery, &c.

✱MARCH 29.—**London, S.W.**—Messrs. Allsop & Co. will sell (by direction of the Disposal Board), building materials, sanitary fittings and household fixtures, at Preece's Riding School, Hollywood-road, Fulham. Auctioneers, 141, Park-road, Regent's Park, N.W. 8.

✱MARCH 30.—**Bristol.**—Messrs. Fuller, Horsey, Sons & Cassell will sell, at the Grand Hotel, contractors' plant, including locos, concrete mixers, pile engines, &c. Catalogues from Auctioneers' Offices, 11, Billiter-square, E.C. 3.

MARCH 30.—**Gloucester.**—Messrs. J. Hibbard & Son will sell at Toddington, Gloucester, a stock of English timber.

MARCH 31 AND 31.—**Bucks.**—Messrs. J. Hibbard & Sons, will sell by order of the Board of Trade, at Orchard Lea, Winkfield, Bucks, Saw Mills, hutments, etc.

MARCH.—**London, E.C. 4.**—Messrs. Dann & Lucas will sell, at the Cannon-street Hotel, E.C. 4. the freehold residential and agricultural estate known as "Farningham Hill."

✱APRIL 12.—**Tring, Herts.**—Messrs. W. Brown & Co., will sell at the Rose and Crown Hotel, Tring, 10 freehold building sites. W. Brown & Co., auctioneers, Tring.

✱APRIL 12 AND 13.—**Beverley Brook.**—Messrs. Allsop & Co. will sell by direction of the Disposal Board, at No. 2 Balloon Training Depot, Beverley Brook, huts, building and builder's plant. Catalogues, 141, Park-road, Regent's Park, N.W. 8.

✱APRIL 13.—**Studley.**—Messrs. J. Hibbard & Sons will sell, on the premises of Messrs. Beint & Sons' Mill, Studley, well cut stock of prime ash, 60,000 cube ft., cut into planks of all thicknesses. Catalogues, Auctioneer, Newington Green, N.

✱APRIL 20.—**Bristol.**—Messrs. Fuller, Horsey & Co. will sell, at the Grand Hotel, contractors' plant from the National Shipbuilding Yard, Beachley. Catalogues from the Auctioneers' Offices, 11, Billiter-square, E.C. 3.

✱APRIL 29.—**Kensington.**—Messrs. Daniel Watney & Sons will sell at Winchester House, Old Broad-street, important freehold estate situate close to Gloucester-road Station, Kensington.

✱APRIL 29.—**Near Eltham, Kent.**—Messrs. Daniel Watney & Sons will sell about 64 acres of freehold building land. Particulars, 44, Frederick-place, Old Jewry, London, E.C. 2.

✱NO DATE.—**London, S.E.**—Messrs. Knight, Frank & Rutley will sell, at Shooter's Hill, valuable area of freehold building land known as Shrewsbury House estate, in the spring (unless previously disposed of).

✱NO DATE.—**Purfleet.**—Messrs. Daniel Watney & Sons will sell, at Purfleet, a most important freehold estate, covering 342 acres.

✱NO DATE.—**Various.**—Sale by Tender by order of the Disposal Board (Ministry of Munitions), tents and marquees laying at Tonbridge, Richmond Park, Chelmsford.

Competitions.

(See Competition News, page 324.)

Public Appointments.

MARCH 20.—**Bradford.**—Architectural Assistant, also Clerk of Works, required by the City Council. W. Williamson, City Architect, Town Hall, Bradford.

MARCH 20.—**Kent.**—Draughtsman required by the Kent County Council. Salary £200 to £250. A. Barker, Esq., County Land Agent, 27 High-street, Maidstone.

MARCH 22.—**Barrow-in-Furness.**—Temporary Architectural Assistant for the County Borough. Salary £5 per week, including War Bonus.

✱MARCH 23.—**Worcester.**—CLERK OF WORKS.—A clerk of works and timekeeper for the new buildings in course of erection at the City of Worcestershire Homes for Disabled Sailors and Soldiers. J. Livingstone Wood, Bank Buildings, Cross, Worcester.

MARCH 23.—**Glamorgan.**—ASSISTANTS.—Service of two Junior Assistants for the C.C. Salary £150, rising by annual increments to £240.

✱MARCH 25.—**Beeston, Notts.**—Architectural assistant for the U.D.C. Mr. Walter F. Bickford, engineer and surveyor, Public Offices, Beeston, Notts.

✱MARCH 25.—**Cheltenham.**—CLERK OF WORKS.—Clerk of Works in connection with Council's scheme for the erection of about 80 houses. Gilbert M. Ilqnham, Esq., Clerk to the Council, Essex-place, Cheltenham.

MARCH 26.—**East Riding of Yorks.**—ASSISTANT.—Assistant for the C.C. Salary £250 per annum.

✱MARCH 26.—**Southampton.**—Clerk of Works and junior architectural assistant for the County. Mr. W. J. Taylor, County surveyor, The Castle, Winchester.

✱MARCH 27.—**Cheshire.**—CLERK OF WORKS.—A clerk of works for the completion of the new Grammar School Buildings, Nantwich, Cheshire. Mr. T. H. Whiteley, Nantwich and Acton Grammar School, Nantwich.

✱MARCH 27.—**Newport, Mon.**—Temporary Architectural Assistant required by the County Borough. Mr. S. F. Ward, Borough Architect, Town Hall, Newport, Mon.

✱MARCH 30.—**Lincoln.**—HOUSING ARCHITECT.—Salary £500 per annum. Mr. Wm. Bagshaw, Town Clerk, Guildhall, Lincoln.

✱MARCH 30.—**Sedgley.**—CLERK OF WORKS. Appointment of Building Superintendent or Chief Clerk of Works, for the U.D.C. Mr. Thomas B. Knight, clerk, Council House, Sedgley, Staffs.

✱MARCH 30.—**Wakefield.**—Quantity surveyor's assistant for the West Riding County Council. Mr. Louis J. Newton, County Quantity Surveyor, County Hall, Wakefield.

✱MARCH 31.—**Hadham and Stansted.**—Clerk of Works, for the R.D.C. Messrs. Sifton & Thorpe, architects, 38, Museum-street, W.C. 1.

✱MARCH 31.—**Exeter.**—Junior Architectural Assistant required, by the City Corporation. John Bennett, Esq., City Architect, Exeter.

✱MARCH 31.—**Oxford.**—CLERK OF WORKS.—Clerk of Works for housing farm buildings, &c. Salary £300 per annum, rising by £10 yearly to £350. Mr. James Ross, Clerk to the C.C., County Hall, Oxford.

✱MARCH 31.—**Wood Green.**—ARCHITECTURAL ASSISTANT.—Temporary architectural assistant. Remuneration at the rates of £300 per annum inclusive. Mr. Wm. P. Harding, Clerk to the Council, Town Hall, Wood Green.

APRIL 6.—**Newport Pagnall.**—CLERK OF WORKS.—Services of a Clerk of Works for the R.D.C.

✱APRIL 13.—**Durham.**—Superintendent of Works, also Heating Engineer required by the Education Department, Director of Education, Shire Hall, Durham.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations.—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council and P.C. for Parish Council.

ARBROATH.—Plans have been passed by the Dean of Guild Court of important additions to the engineering works of Douglas Fraser & Sons, and of an addition to Stanley Works by Webster Bros., flax spinners.

AYLESBURY.—Plans passed by T.C.:—Retort house additions, High-street, for Aylesbury Gas Co.; additions, &c., to "Bull's Head" Hotel, for Aylesbury Brewery Co.; porch to church, Buckingham-street, for Trustees, Primitive Methodist Church.

BARNES.—Plans passed by U.D.C.: Workshop, Ship-lane, Mortlake, by Messrs. Watney, Combe, Reid & Co., Ltd.; depository extension, Arundel-terrace, by Messrs. Harrods, Ltd.; conversion of house into flats, 5, Northumberland-avenue, by Mr. M. Skinner; additions, 61, Castelnau, Barnes, by Messrs. Simmonds Bros. & Sons, Ltd.; workshop, rear Nos. 43 to 53, Merthyr-terrace, Barnes, by the Vulcan Engineering Co.; additional rooms to Cottage, Riverside Maltings, High-street, Mortlake, by Messrs Watney, Combe, Reid & Co., Ltd.; factory extension, Kew Meadows, Mortlake, by the Glendower Aircraft Co., Ltd.; two bungalows, Hillerndon-avenue, Barnes, by Mr. Wm. Nichols; additions to hall, "Thornfield," Woodlands-road, Barnes, by J. Culver & Sons; four houses, Gilpin-avenue, East Sheen, by Mr. G. E. Sturgis; garage, "Sundial Cottage," Vicarage-road, East Sheen, by Mr. R. Haines; polo stables, High-street, Barnes, by Mr. E. J. Partridge.

BURNLEY.—Plans approved: Extension to brewery, Bank-parade, for the Burnley and District Clubs Brewery Co.; garage, Arch-street, for Mr. A. Cooper; extension to Barden Mill, Barden-lane, for the Barden Mill Co., Ltd.; alterations to Cricket Pavilion, Turf Moor, for the Burnley Cricket and Bowling Club; two houses, Ightenhill, Park-lane, for Mr. T. Kelshaw; two houses, Watt-street, for Mullen & Durkin; extensions to canteen, Lowerhouse, for J. Dugdale Bros.; ten houses, Mill-street, Lowerhouse, for J. & G. Duxbury, Ltd.

EAST HAM.—Plans passed by B.C.: Shop, corner of Barking-road and Latimer-avenue, for W. Atkinson; alterations at rear of 225, High-street North, for Mr. Yewlett; alteration to shop, 39, Barking-road, for Evans & Co., Ltd.; extension to bakery, &c., Little Ilford-lane, for Stratford Co-Op. & Industrial Society, Ltd.; stable at rear of 126, Plashet-lane, for Mr. Malyon.

FALKIRK.—At a sitting of the Dean of Guild Court a warrant was granted to the trustees of Camelon Parish Church to enlarge and reconstruct the church at an estimated cost of £4,000.

GREENWICH.—Drainage plans passed by B.C.: At 10, Crooms Hill, for Messrs. H. Groves & Son; at 3, Glenluce-road, for Messrs. J. C. Longhurst & Son; at Messrs. Redpath, Brown & Co.'s premises, River-terrace, Blackwall-lane.

HACKNEY.—Plans passed by B.C.: Bungalow, Bakers Hill, for Messrs. Duncan, Tucker & Sons; factory premises, Birkbeck Works, for Mr. D. P. Hayworth; rebuilding of "Prince of Wales" public-house, 146, Lee Bridge-road, for Mr. A. Monk.

HALESOWEN.—The Governors of the Grammar School have decided to proceed with a scheme for the extension of the existing buildings, so that accommodation may be provided for 500 scholars.

LAMBETH.—New premises, rear of 132 and 134, Vauxhall-street, for the Nugget Polish Co.—Plans have been prepared for a new County Court for Lambeth, and the building will be erected in Cleaver-street, on the Duchy of Cornwall estate at Kennington Cross.

LESLIE.—The inhabitants have subscribed £728 towards a war memorial to be erected on the village green in the form of an obelisk, which will stand 18 ft. high, from a design by Mr. Kerr. The cost is estimated at £1,000.

LOCHRYAN.—The Multilocular Shipbuilding Co. has been granted permission to construct an open pile jetty, extending 135 ft. below low-water mark, and a slipway extending 90 ft. below low-water mark, in connection with the shipyard at Innermessan, on the eastern side of Lochryan.

LONDONDERRY.—Recently at a meeting of Londonderry Port Sanitary Board, Mr. John M. Robinson, architect and surveyor, submitted plans for the proposed infectious hospital at Ballyrattan. The plans will be sent to the L.G.B.

LUTON.—Plans passed: Extensions to the works of Vauxhall Motors, Ltd., Kimpton-road; extensions to works in Portland-road, for Fricker's Metal Co., Ltd.; factory in John-street, for Mr. W. Pope; actory additions in Collingdon-street, for Mr. G. F. Farr; house in Selbourne-road, for Mr. P. R. Hill.

NELSON.—Plans passed: Mrs. S. Thompson, garage, Scotland-road; V. E. Haighton, Ltd., weaving shed, Eagle-street; the Nelson Old Band Club, two porches, Clifford House; W. E. Slading, alterations, Wolf Dene; Dr. Flack, shop fronts, 159 and 161, Railway-street; Co-operative Society, alterations, 40, Scotland-road; the Mother Superior, alterations, Fern Bank.

ROTHERHAM.—Plans passed by T.C.: Mr. A. Guest, Ramsden-road, one pair semi-detached houses and bungalow; Mr. J. Simpson, 46, Wellgate, one-story extension to workshop; Messrs. Home Baking Co., Norfolk-street, alterations and additions to bakery; Mr. G. Lancaster, Ramsden-road, house; Mr. Herbert James, Fitzwilliam-road, 13 pairs of semi-detached houses; Mr. J. Parkinson, workshop, 101, Brown-street; Mr. Andrew Massarella, 37, College-road, extension to motor room; Mr. F. Rumfitt, 25, Gerard-road, workshop; South Yorkshire Wine & Spirit Co., Ltd., College-street, rebuilding of the licensed house, &c., "Grapes Inn"; Messrs. Robert Jenkins & Co., Ltd., Wortley-road; motor garage and time office.

RYE.—Plan passed by R.D.C.:—Cottage, East Guldeford, for Mr. E. B. Dunster.

RYTON.—Plans for 28 houses to be erected at Greenside by the Stella Coal Co., Ltd., have been approved by the R.D.C.

SHEFFIELD.—Plans passed: Six houses, Dunkeld-road, Ecclesall; for Mr. A. J. Belton; house, offices and warehouse, Bessemer-road, for Wm. Atkins & Co., Ltd.; two houses, offices and garage, Water-lane, for J. Longbottom & Son; house, Gobnar-road, for Mr. T. Baumber; four houses, Glentilt-road, for A. G. Jones & Co., Ltd.; two houses, Midhill-road, for T. Wilkinson & Sons; house and garage, Fulwood-road, for Mr. T. W. Elliott; house, Ringinglow-road, for Mr. James Nicholson; house, Muskoka-drive, Ecclesall, for Mr. G. M. Taylor; house, Clifford-road, for Mr. G. Peachey; house, Stumperlow Park-road, for Mr. J. Wilfrid Sivil.

TONBRIDGE.—Plans have been approved by the R.D.C. for a Village War Memorial Hall at Lamberhurst, and a cottage at Church Farm, Paddock Wood, for Mr. A. Fairbrother.

WIGTON.—Addition to Moorhouse Hall, for Mr. R. Dixon.

WITHAM.—Offices for Messrs. Cullen & Son; garage and stores for the National Glove Co.; garage for Messrs. Glover.

WOOTON BASSETT.—The Cricklade and Wootton Bassett R.D.C. has adopted the sewerage and sewage disposal scheme submitted by its consulting engineer, Major T. J. Moss Flower, for the modification of the sewerage and sewage disposal works, and plans and estimates are being prepared for presentation to the Ministry of Health, together with the application for authority to borrow the money required. The scheme involves the construction of an entirely new outfall sewer and new sewage disposal works.

* See also our List of Competitions, Contracts, &c.

MODEL FORM OF AGREEMENT FOR PURCHASE OF WORKING CLASS DWELLINGS.

WE have received from the Ministry of Health a model form of agreement for the purchase of working-class dwellings under Section 12 of the Housing Act of 1919. This is a short document deemed to include the general conditions of sale in use in the locality such as those of a local Law Society, and provision is made for the production of an abstract of title by the builder, and its validity is subject to the consent of the Ministry of Health. Attached is a schedule of fifteen paragraphs, in which compliance with statistics and by-laws is qualified by production of the architect's consent in writing to the use of alternative materials. Both penalty and bonus clauses are included for the builder, and in the case of a number of houses an opportunity is given to the builder to withdraw after the completion of an agreed number. The standard rate of wages must be paid and the builder is indemnified against increased rates. However unlikely the purchaser is to benefit at the present time we think this clause should give reciprocity. Labour cost is to be reckoned on the basis of one-third the total price for house, garden and road charges. The architect is empowered to give notice if, in his opinion, the builder is negligent or not complying with the agreement, and if he does not conform to the conditions in a week the vendors may take possession and complete, deducting the cost from monies due or to be due to the builder. Provision for the architect is included.

The document concludes with an interesting table giving the percentage of the one-third cost of the house to be allocated to various trades, skilled and unskilled. These are: Excavator, concretor and drains, unskilled, 9 per cent.; bricklayer, skilled, 16.2 per cent., unskilled, 13.8 per cent.; carpenter and joiner, skilled, 27 per cent.; slater, skilled, 1.7 per cent., unskilled, 1.3 per cent.; plasterer, skilled, 7.75 per cent., unskilled, 6.25 per cent.; plumber, skilled, 6 per cent., unskilled, 2 per cent.; painter and glazier, skilled, 9 per cent.

PRICES CURRENT OF MATERIALS *

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 4 10 0

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	3 2 6	Best Blue Pressed Staffordshire ...	9 11 0
Best Stourbridge Fire bricks	11 10 0	Do. Bullnose ..	9 13 6
		Blue Wire Cuts	7 18 6

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers ..	24 0 0	D'ble Str'tch'rs	31 10 0
		D'ble Headers	28 10 0
		One Side and two Ends ..	32 10 0
Headers.....	23 10 0	Two Sides and one End	33 10 0
Quoins, Bullnose and 4½in. Flats	29 10 0	Splays and Squints.....	31 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s.	d.		
Thames Ballast	19	6	per yard,	delivered
Pit Sand	23	6		
Thames Sand	25	6	„ „	2 miles
Best Washed Sand	24	6	„ „	radius
¾in. Shingle for Ferro-Concrete	23	6	„ „	Paddington.
¼ in. „ „	24	6	„ „	

Per ton. delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	3 18 6	..	4 4 0

71/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above. 5 0

Best Ground Blue Lias Lime 2 16 0 at riy. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 61s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 43s. 6d. per ton at riy. dpt.

STONE.

	s.	d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	2	2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2	4
Do. do. delivered on road waggons at Nine Elms Depot	2	5
PORTLAND STONE—		
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	4	3
Do. do. delivered on road waggons at above stations, per ft. cube..	4	4

White basebed, 3d. per ft. cube extra.

NOTE—½d ft. cube extra for every foot over 30 ft. *average*, and ½d. beyond 30 ft.

YORK STONE, BLUE—*Robin Hood Quality.*		
Delivered at any Goods Station London.	s.	d.
Scappled random blocks .....Per Ft. Cube	11	9
6 in. sawn two sides landings to sizes (under 30 ft. super.) .....Per Ft. Super	8	1½
6 in. rubbed two sides, ditto ..... „	9	1½
3 in. sawn two sides slabs (random sizes) „	3	7½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... „	2	2
1½ in. to 2 in. ditto, ditto ..... „	1	10
HARD YORK—		
Delivered at any Goods Station London.		
Scappled random blocks .....Per Ft. Cube	8	9
6 in. sawn two sides landing to sizes (under 40ft. super.) .....Per Ft. Super	7	0
6 in. rubbed two sides ditto ..... „	8	3
4 in. sawn two sides slabs (random sizes) „	3	3
3 in. ditto, ditto „	4	4
2 in. self-faced random flags ..Per Yard Super	10	6

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11.....	60 0	per standard
4 × 9	48 0	„
4 × 8	46 5	„
4 × 7	46 0	„
3 × 8	46 0	„
3 × 7	46 0	„
2½ × 7	46 0	„
3 × 6	45 0	„
3 × 11	60 0	„
2 × 11	60 0	„
3 × 9	52 0	„
3 × 9	52 0	„
3 × 4½.....	45 0	„
3 × 4	45 0	„

PLANED BOARDS.

1 × 11	65 0	„
1 × 9	50 0	„

PLAIN EDGE FLOORING.

Inches		
¾	34/-	square
⅞	40/-	„
1	44/-	„
1¼	55/-	„
1½	65/-	„

TONGUED AND GROOVED FLOORING.

Inches		
1	45/6	square
1¼	56/6	„
1½	66/6	„

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	34/-	square
⅞	40/-	„
1	54/-	„

BATTENS.

Inches	£ s.	
2 × 2	39 10	per standard

SAWN LATHS.

Per bundle ..... —

Dry Wainscot Oak, per ft. super, as inch	0	2	6	to	0	3 0
¼ in. do. do.	0	2	0	to	0	2 6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	6	to	0	3 0
Cuba, Mahogany	0	3	6	to	0	4 0
Teak (Rangoon, Moulmein or Java), per load.. ..	60	0	0	to	85	0 0
American Whitewood planks, per ft. cube ..	0	18	0	to	1	0 0
Scotch Glue, per cwt.	5	5	0	..	—	
Liquid Glue, per gallon ..	0	17	0	..	—	

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	55 0 0
„ „ „	22 by 12	44 7 6
First quality „	22 by 11	40 15 0
„ „	20 by 12	40 7 6
Best Blue Portmadoc	20 by 10	35 0 0
„ „	18 by 10	27 17 6
First quality „	18 by 9	22 15 0
„ „	16 by 10	21 10 0
„ „	16 by 8	16 17 6

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district.....	6 15 0
Ditto hand-made ditto.....	7 0 0
Ornamental ditto	7 2 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	s.	d.
R. S. Joists, cut and fitted	30	0 0
Plain Compound Girders	32	0 0
„ Stancheons	34	0 0
In Roof Work	39	0 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £10 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	10	12½	12½	25
Water	1½	7½	5	22½
Steam	+8½	—2½	+3½	—20
Galvanised Gas ..	+15	—2½	+12½	—15
„ Water	+26½	+2½	+22½	—12½
„ Steam	+37½	+7½	+32½	—10

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts..	5 6	4 0	4 10
2½ in. „ „	6 8	4 5	6 0
3 in. „ „	8 1	4 10	7 3
3½ in. „ „	9 0	6 0	8 5
4 in. „ „	9 6	6 10	9 8

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	4 0	2 3	3 0
2½ in. „ „ „	4 6	2 8	3 8
3 in. „ „ „	5 6	3 3	4 10
3½ in. „ „ „	6 6	3 10	5 8
4 in. „ „ „	6 9	4 8	6 10

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices. 4 in., 12s. .. 5 in., 15s. .. 6 in., 18s.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	28 0 0	to	29 0 0
Staffordshire Crown Bars — good merchant quality	29 0 0	..	30 0 0
Staffordshire "Marked Bars"	31 10 0	..	32 10 0
Mild Steel Bars	28 0 0	..	30 0 0
Steel Bars, Ferro-Concrete quality, basis price ..	28 0 0	..	30 0 0
Hoop Iron, basis price ..	32 0 0	..	34 10 0
„ „ Galvanised ..	50 0 0	..	54 0 0
Sheet Iron Black—			
Ordinary sizes to 20 g. ..	39 0 0	..	40 0 0
„ „ 24 g. ..	40 0 0	..	41 0 0
„ „ 26 g. ..	42 0 0	..	43 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g. ..	50 0 0	..	52 0 0
Ordinary sizes to 22 g. and 24 g.....	51 0 0	..	52 0 0
Ordinary sizes to 26 g. ..	51 0 0	..	54 0 0
Ordinary sizes to 20 g. ..	50 0 0	..	52 0 0
„ „ 22 g. and 24 g.	51 0 0	..	52 0 0
Ordinary sizes to 26 g. ..	53 0 0	..	54 0 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.....	50 0 0	—	52 0 0
Ordinary sizes, 22 g. and 24 g.....	51 0 0	..	52 0 0
Ordinary sizes, 26 g.	53 0 0	..	54 0 0
Sheet Iron, Galvanised, flat, best quality—			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker.....	52 0 0	—	53 0 0
Best Soft Steel Sheets, 22 g. and 24 g.....	53 0 0	..	54 0 0
Best Soft Steel Sheets, 26 g.	54 10 0	..	55 10 0
Cut Nails, 3 in. to 6 in.	37 10 0	..	38 10 0

(Under 3 in. usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.
LEAD Sheet, English, 4 lb. and up	64 0 0	..	62 0 0
Pipe in coils	64 10 0	..	62 10 0
Soil Pipe	67 0 0	..	65 0 0
Compo pipe	68 0 0	..	66 0 0

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 1s cwt extra.

Old lead, ex London area, at Mills ..... per ton	45	0	0	.. —
Do., ex country, carriage forward..... per ton	46	0	0	.. —

COPPER—				
Strong Sheet ....per lb.	0	2	3	.. —
Thin „ .... „	0	2	4	.. —
Copper nails .... „	0	2	3	.. —
Copper wire .... „	0	2	4	.. —
TIN—English Ingots „	0	4	0	.. —
SOLDER—Plumbers' „	0	1	10	.. —
Tinmen's..... „	0	2	6	.. —
Blowpipe ..... „	0	2	11	.. —

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	7½d.	32 oz. fourths	10½d.
„ thirds	8d.	„ thirds	11½d.
21 „ fourths	8½d.	Fluted, Obscured and Enamelled Sheet,	
„ thirds	8½d.	15 oz.	9½d.
26 „ fourths	9½d.	21 „	11½d.
„ thirds	10½d.		

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	6½d.
⅛ Rough rolled and rough cast plate.....	7½o.
¼ Rough rolled and rough cast plate.....	8½d
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7½d
Ditto, tinted	9½d.
Rolled Sheet	7d.
White Rolled Cathedral.....	7d.
Tinted do.	9d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes..... per gallon	0 12 0	
„ „ „ in barrels .... „	0 12 3	
„ „ „ in drums .... „	0 12 5	
Boiled „ „ in barrels .... „	0 12 9	
„ „ „ in drums .... „	0 12 11	
Turpentine in barrels ..... „	0 21 3	
„ in drums (10 gall.) .. „	0 21 9	
Genuine Ground English White Lead, per ton	90 15 0	

(In not less than 5 cwt. casks.)

GENUINE WHITE LEAD PAINT—		
"Nine Elms," "Park," "Supremus," and other best brands (in 14 lb. tins) not less than 5 cwt. lots.. per ton delivered	125	10 0
Red Lead, Dry (packages extra) .. per ton	75	0 0
Best Linseed Oil Putty ..... per cwt.	1	14 0
Filocol..... per cwt.	0	18 0
Size. X D Quality..... fkn.	0	6 6

VARNISHES, &c.

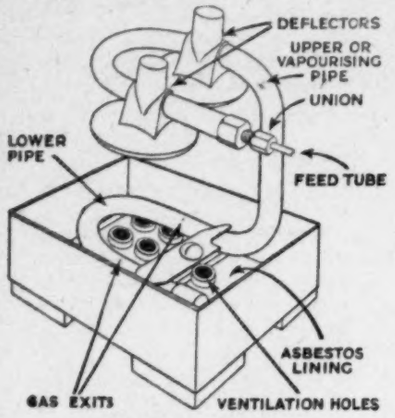
	Per gallon. £ s. d.
Oak Varnish.....Outside	0 18 0
Fine ditto ..... ditto	1 0 0
Fine Copal ..... ditto	1 1 6
Pale Copal ..... ditto	1 2 6
Pale Copal Carriage ..... ditto	1 4 6
Best ditto ..... ditto	1 14 6
Floor Varnish..... Inside	0 19 0
Fine Pale Paper ..... ditto	0 18 0
Fine Copal Cabinet ..... ditto	1 2 6
Fine Copal flatting ..... ditto	1 0 6
Hard drying Oak ..... ditto	0 18 0
Fine Hard drying Oak ..... ditto	0 19 0
Fine Copal Varnish ..... ditto	1 0 6
Pale ditto ..... ditto	1 2 6
Best ditto ..... ditto	1 14 6
Best Japan Gold Size.....	0 16 0
Best Black Japan	0 19 0
Oak and Mahogany Stain (water)	0 10 0
Brunswick Black	0 11 0
Berlin Black.....	0 16 0
Knotting (patent)	1 18 6
French and Brush Polish	1 11 0
Liquid Dryers in Terebine	0 19 0
Cuirass Black Enamel	0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

NEW INVENTIONS.

The "Welcome" Heater.

This heater (manufactured by the London Warming & Ventilating Co., Ltd., 76, Newman-street, W. 1) is of the paraffin vapour type, and burns a mixture of 80 per cent. air and 20 per cent. paraffin. The oil is fed to the heater from a 1-gallon tank fitted with a needle valve to the two horse-shoe shaped pipes directly over each other. These pipes are first heated by burning spirits in the asbestos-lined pan below, and as the paraffin passes through the upper pipe it is vaporised, the gas escaping from two small holes in the pipe

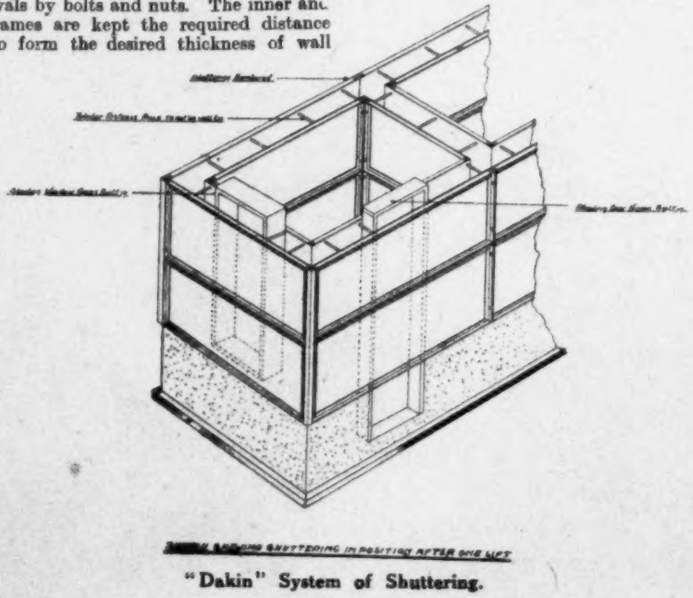


"Welcome" Heater.

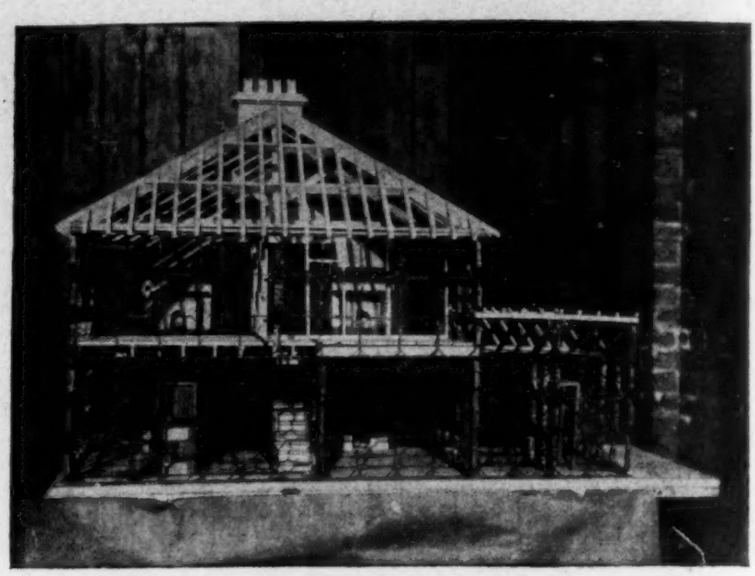
below. The deflectors suspended above the gas exits permit of the flame being deflected to the ovens on either side or the boiler at the back of the stove, if desired. The heater can be fitted to practically any existing type of range, and, of course, with its use coal, coke, ashes, smoke, &c., are eliminated. When giving its most intense heat the "Welcome" heater consumes about one gallon of paraffin in from 10 to 20 hours, and is stated to boil 30 gallons of water in 20 minutes. It is made in various sizes suitable for all purposes, from domestic use to steam engines. The provisional price of the domestic size is £4 4s.

Shuttering for Concrete Work.

This invention, which has been approved by the Ministry of Health for use in housing schemes, is a new form of shuttering by which the outer and partition walls of a concrete house are erected simultaneously in 2 ft. courses. The steel sheeting is attached to angle irons at the corners and to vertical strengthening rods at intervals by bolts and nuts. The inner and outer frames are kept the required distance apart to form the desired thickness of wall by distance pieces of metal tubing. In order to provide for the window and door openings, moulds of the required shape are inserted between the shuttering. To form cavity walls, moulds of a width less than the distance between the shuttering are suspended by a cross-piece which rests on the top of the shuttering, and held in position between the frames by clips. When the concrete has been poured into the bottom course of the framing, a second course is erected and the next layer poured. After the second course the bottom framing is unbolted and used to form the third course; thus two sets of shuttering may be used to construct a wall of any height. The chimneys are constructed of brickwork to avoid complicated shuttering. The inventors claim that the main points of the system are simplicity, ease of manipulation, speed of construction, automatic plumbing and levelling, true finished surfaces, clean and sharp angles and arrises, reduction of cost at least 5s. per sup. yard over brick, solid or hollow walls optional, ease of transport, one set of shuttering would build 1,000 cottages without refacing, easily obtainable variation in plan without undue expense, reinforcement correctly placed, and that the cost spread over the life of shuttering is about 6s. per house. Messrs. Herbert E. Dakin, Ltd., of 31–33, High Holborn, E.C., are the inventors.



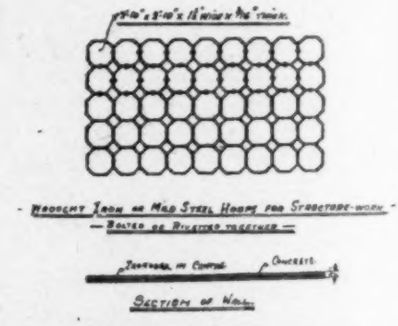
"Dakin" System of Shuttering.



A "Hoop" House.

"Hoop" Houses.

A novel method of house-building is embodied in a pattern house now on view in the Weardale Coal Co.'s Thornley (co. Durham) engineering works. Mr. J. T. Simpson, chief engineer of the company, is the inventor. The chief feature of the invention is that the house is built on a skeleton of interchangeable iron or steel hoops. Each hoop is 2 ft. 10 ins. by 2 ft. 10 ins. across, each corner being squared off for a few inches. It is claimed that the flattened corners will give additional strength to the superstructure, as they will resist lateral or diagonal thrusts. The hoops are bolted together at the sides. The web is covered with a 7 in. concrete wall. The cement casing may be fixed to it at any point, and when the web is floor-high the joiners can put in the floors, the erectors can



Reinforcement for "Hoop House."

take the web higher, and the concretors can get on with the filling. The hoops are standardised so as to allow a certain number for a window and a certain number for a door opening.

It is claimed that the "hoop" house will be very suitable for districts where land subsidence is prevalent, as the hooping will be a safeguard against cracking, and that the webbing is suitable for either solid or cavity walls.

A site is being cleared at Thornley for some five-room houses on this system at a cost of approximately £650. It is claimed that the superstructure can be erected in two days, and the house completed and ready for occupation in ten days.

The Ministry of Health has approved the invention, and tenders have been submitted to various housing authorities for these houses.

LAW REPORT.

Workmen's Compensation.

In the Shoreditch County Court, before Judge Cluer, a case has been decided of importance to builders. The applicant was Arthur Jonathan, of Walthamstow, a builders' labourer, who sued Walter Lawrence & Sons, Ltd., builders, for an award under the Workmens' Compensation Act. It was explained that the amount of compensation agreed upon, if the respondents were found to be liable, was £12 15s. 10d. Counsel for the applicant explained that the point was whether this man had legally started work, and this was important as seventeen men were buried under a wall which fell, and there were a number of claims which depended upon this decision. Large building operations were being carried out at the British Wire Works, Leyton. Three walls had been put up, two of cement and sand, and a third, a temporary one, 100 ft. long by 30 ft. high, of lime and mortar. A few feet from this wall was a messroom used by the men, and it was usual for them to take shelter there if it was raining and resume work when it stopped. On December 2 they got there at eight o'clock, as did the applicant, but, as it was raining and a high wind was blowing, seventeen of them took shelter in the hut, and the rest about the building. At about 9.30 a.m. the wall collapsed on top of the hut, and the men were buried in the ruins. They were rescued with difficulty, and the applicant was removed to hospital, where he remained three weeks; the rest of them were more or less seriously injured. Had the men started work legally was the whole and sole point of decision. The applicant said he was paid by the hour, with an hour's notice on either side. He called it a permanent job, inasmuch that he would have remained on it until it was finished. He did not go each day and ask for work; it was understood that he would be there.

Mr. Shakespeare, for the respondents, submitted that it had been decided that there had to be two things established before there could be an award. It must (1) arise out of, and (2) be in the course of his employment. He submitted that no accident could arise in the course of his employment unless the man was doing something which the contract of service entitled him to. He had not found one case of award where the contract of service was not actually existing. There was no obligation to attend his employer's premises; he could start work when he liked, and leave off when he liked. How could it be said that a contract which expired on the previous Friday was resumed on the Monday with no work being done? Judge Cluer: He said they were on the job until they got notice. Mr. Shakespeare said that a contract could not be inferred from that, because the men admitted that they waited as long as they liked for the contract of service to start. It had to be proved that the man was employed to work in that particular place. Was there any contract of service that required him to be in the shed?

Judge Cluer, in giving judgment, said he thought the applicant had established his claim. He said it was regular employment until he got notice. The fact that they came daily in the hope that they might be of benefit to their employers, and were allowed to wait, justified him in finding that it was part of their employment. He considered a contract of service did exist, and, therefore, the accident arose both out of and in the course of his employment. He entered an award for the applicant for the agreed amount, with a declaration of liability. Leave to appeal was granted. Judge Cluer was informed that there were other claims to come forward, and he ordered these to stand over ending the result of the appeal.

The City Churches.

It is understood that the Commission which is inquiring as to whether the present number of churches in the City of London is necessary will not suggest the sale of more than three or four. It is also expected that the Commission will recommend that some of the old isolated towers should be spared.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than first post on Wednesday.*

* **Denotes *accepted*.** †**Denotes *provisionally accepted*.**
‡ **Denotes *recommended for acceptance*.**
§ **Denotes *accepted subject to modifications*.**

AYLESBURY.—Erection of bedroom at Isolation Hospital, for the Corporation :—

*Borough Surveyor	£221 0
G. Stevens	315 0
W. G. Ellis	262 10

AWBRIDGE (HANTS.).—For repairs and redecoration at The Manse, Abbey Hall and class rooms, for the Minister and Deacons of the Abbey Congregational Church. Mr. W. Comley Roles, architect and surveyor, Awbridge, near Romsey :—

Item.	†Roles & Sons.	Goulding & Son.	G. F. Hurst & Sons.
1.	£55 7 6	£88 14 6	£87 10
2.	113 0 0	159 4 10	264 0
3.	15 0 0	36 0 0	‡30 0
4.	64 10 0	78 10 6	120 0
5.	60 0 0	(Approx.) (Offer on cost-plus-per cent-age basis)	118 0
6.	10 0 0		‡20 0
	£317 17 6		£639 10

BRADFORD.—Erection of 20 semi-detached houses at Idle, for the Corporation :—
*A. Dickinson & Son..... £780 per house.

BRADFORD.—Plasterers' work at Lilycroft School for the Corporation :—
*J. C. & A. Sunderland..... £384 8 0

BRADFORD.—Slaters' work at Princeville Nursery School, for the Corporation :—
*Hill & Iveison £167

BRADFORD.—Supply of road apparatus, for the T.C. :—
*Phœnix Engineering Co.: Six 160-gallon tar boilers, at £61 12s. each; six 80-gallon tar boilers, at £41 16s. each; and a 22 cwt. portable mortar asphalt boiler, £110.

CANNOCK.—Erection of 16 houses at Chadsmoor, for the U.D.C. :—
*Lea & Siddalls—£722 each *plus* increased cost of materials and labour since October 2.

CHEADLE.—For (*a*) erection of 46 houses on Weston Colney site, and (*b*) lay-out of site for the U.D.C. :—

(*a*) J. Walters, Longton	£38,366 0
(*b*) Sanders & Torrance, Stoke	5,214 7

DEPTFORD.—For repairs, &c., to "Ravenabourne" and offices, for the Metropolitan Water Board :—

*Crooks & Co.	£328 0
H. Groves & Co.	385 0
A. & W. Warren	491 15
Mayo & Co.	763 0

EAST HAM.—For (*a*) installation of electric light, and (*b*) installation of low pressure hot water apparatus, at Hart's Sanatorium, for the B.C. :—

*(*a*) Semco, Ltd.	£248
*(*b*) W. E. Fretwell	358

HERTFORD.—For erection of shed at Corporation Depot, for the T.C. Mr. S. M. Senior, A.M.Inst.C.E., Borough Surveyor, Hertford :—

*Botsford & Vale, Hertford	£335
W. J. Cearns, Stratford, E. 15	478
Elkins & Co., Ltd., Hertford	587

LANCING.—For making up Penhill-road, Lancing, for the Steyning West R.D.C. Quantities by Mr. Fredk. Slaughter, M.Inst.C.E. :—

†J. W. Tammans, Shoreham-by-Sea	£4,497
Macdonald & Co., Southwick	7,436

LICHFIELD.—For erection of houses, for the R.D.C. :—
*C. Mason, Rugeley—24 houses at Brereton, £20,488
*H. Boot & Sons, Westminster—276 houses at £778, £848, £854 15s. and £839 13s., according to type.

LONDON.—Open-air school at Stowey House, Clapham, for the L.C.C. :—

*John Harrison & Co., Camberwell	£2,372
Triggs & Co., Clapham	2,925
Humphreys, Ltd., Knightsbridge	3,250
Wm. Harbrow, Ltd., Bermondsey	2,458

LONDON.—For supply of 2,000 tons of granite setts, to the Camberwell B.C. :—
*Wettern Bros. ..... £6 18 6 per ton

LONDON (HACKNEY).—For extension and completion of sub-station at Northwold-road, for the Hackney B.C.; Mr. L. L. Robinson, M.Inst.C.E., Engineer :—

*L. H. & R. Roberts, Clapton	£4,421
Stapleton & Sons, Stoke Newington	4,490
Marrable Bros., Leytonstone	4,600
W. Shurmur & Sons, Ltd., Clapton	5,463
Barrett & Power, Hackney	6,662

LONDON (LAMBETH).—Repair and re-decoration (externally), of (1) the North Lambeth Library, 74, Lower-marsh, S.E.; (2) the Durning Library, Kennington-cross, S.E.; (3) the West Norwood Library, Knight's-hill, S.E.; and (4) the Tate (South Lambeth) Library, South Lambeth-road, S.W., for the Lambeth B.C.; Messrs. H. Wakeford & Sons, architects, 184, Clapham-road, S.W. 9 :—

*(1) Mr. Walter Fitch, Brixton	£118 0 0
*(2) Mr. S. T. Wright, Kennington	110 0 0
*(3) Mr. Walter Fitch	62 0 0
*(4) Bradshaw & Bradshaw, S. Lambeth	39 10 0

LONDON (LEWISHAM).—For the erection of the first section of the houses to be erected on the Lewisham Park site, for the Lewisham B.C. Mr. Archibald S. Soutar, architect, 8, King William-street, W.C. Quantities by Mr. G. Silvester, 7, Adam-street, W.C. :—

*Mr. Henry Kent, Hither Green	£19,309 12 0
Mrs. W. Pollock, Eltham	20,079 10 0
W. J. Scudamore & Sons, Lee	20,175 4 11
J. W. Falkner & Son, Peckham	20,737 0 0
Mr. Oliver Kennard, Westwood-road, S.E.	20,853 11 7
H. L. Holloway & Son, Brockley	23,721 0 0
Mr. F. W. Loasby, Hither Green, S.E.	24,884 14 2
John Appleby & Sons, Ltd., Rotherhithe	28,519 0 0
King & Co., Lee	30,657 12 6

LONDON.—For (*a*) supply of portable stone breaker and (*b*) supply of portable engine, for the Lambeth B.C. :—

*(*a*) R. Broadbent & Son	£495
*(*b*) Robey & Co.	392

LONDON.—Erection of 16 houses at Knight's Hill, for the Lambeth B.C. :—
*F. & H. F. Higgs £8,400

LONDON.—For repairs to Beavor House, Hammersmith, for the Metropolitan Water Board :—

*W. Chapman	£425
Whitby	517
Crossley, James & Co.	518

NEWTON.—Erection of four houses, for the U.D.C. :
*Findley & Haseldine.....£800 each.

OADBY.—For the construction of about 260 lineal yards of roads, with footpaths, and 680 lineal yards of storm and foul sewers. Mr. R. Cranage, A.M.I.C.E., Engineer and Surveyor, Council Offices, Oadby :—

*Croft Granite, Brick & Concrete Co., Ltd., Croft	£3,298 2 6
Mr. Arthur Sykes, Nottingham	3,317 0 0
Mr. Chas. Chamberlain, Leicester	3,407 7 3
Currall, Lewis & Martin, Ltd., Birmingham	3,591 18 8
Mr. G. H. Greasley, Leicester	3,645 15 11

OSWESTRY.—Erection of houses, for the R.D.C. :—
*W. E. Edwards—Type A, £769 each; type B, £873 each.

PORT GLASGOW.—Causewaying and other work in Shore-street, for the T.C.: Mr. James Murray, Burgh Surveyor, Port Glasgow :—

*R. Struthers, Glasgow	£3,076 2 4
Pim & Co., Edinburgh	2,975 12 6
P. Flaherty, Falkirk	3,181 0 0

ROMFORD.—Construction of streets and sewers for housing scheme, for the R.D.C. :—
*B. H. Hale, Romford £8,337 11 4

ROTHERHAM.—Repairs at Ferham House, for the T.C. :—
*G. Saul & Sons..... £143

ROTHERHAM.—Electric lighting installation at Cold Store, for the T.C. :—
*Lilleker Bros. £226 17 0

ROTHERHAM.—Supply of rails, switches, hangers, &c., for cold store and ice-making buildings, for the T.C. :—
*Lockerbie & Wilkinson (Tipton), Ltd. £549 2 6

ROTHERHAM.—Supply of fittings in connection with the fitting-up of slaughter houses, for the T.C. :—
*Lockerbie & Wilkinson..... £1,108

SHEFFIELD.—For (*a*) construction of the Lowheft pump house and tank, &c., and (*b*) installation of filtration plant at Damflask reservoir, in connection with the River Don scheme, for the Corporation :—

*(*a*) Holloway Bros.	£9,750
*(*b*) Paterson Engineering Co.	16,250

SHEFFIELD.—Erection of 42 houses on land at Wadsley, owned by the Sheffield Estate, for the Corporation :—
*J. H. S. Randall, Ltd., Sheffield: £784 per house (exclusive of roads and sewer work).

SHEFFIELD.—Painting at Upperthorpe Baths, for the Corporation :—
*W. J. Wollerton, Sheffield..... £542

SHEFFIELD.—Painting work, for the Estates Committee of the T.C. :—

*F. A. Tinker: Edmund-road Dwellings	£360
*Simpson & Melling: High Wincobank Dwellings	£950

WALTHAMSTOW.—Additions, decorations and repairs at the Baptist Chapel, school rooms and house at Boundary-road. Mr. Chas. H. Isaacs, Lic.R.I.B.A., architect, 28, Martin-lane, E.C.4 :—

Chapel.	
†J. & J. Dean	£739 0
Barton	689 0
E. Honey	932 0
F. E. McBride	1,020 0
School Room.	
*J. & J. Dean	£417 0
Barton	387 0
E. Honey	315 0
F. E. McBride	340 0
House.	
†J. & J. Dean	£240 0
Barton	215 0
E. Honey	235 0
F. E. McBride	260 10

WARE.—For repairs to the London-road, Ware, for the Metropolitan Water Board :—

*John Dixon	£118 10 0
H. Almond	185 0 0
Chessum & Young	212 14 2

WARE.—For repairs to Chadwell Lodge, Ware, for the Metropolitan Water Board :—

*H. Almond	£140 0 0
Chessum & Young	164 19 3

WEYMOUTH.—Painting Nos. 6–14, Belvedere, for the T.C. :—

*Pates Bros.	£144
A. C. Law	315
Rendell & Son	201
Conway, Ltd.	240

"Luxury Building" in London.

At the meeting of the London County Council on Tuesday last, the report of the Building Acts Committee, which contained sanction for the erection of several cinema theatres, was passed, after considerable discussion. On behalf of the Committee, it was stated that it had not been able to prove that a shortage of building trade labour and material existed in London, but as soon as the Committee was satisfied that any work was interfering with the erection of houses, such work would be suspended. Mr G. F. Sumner stated that at Poplar they were unable to get sufficient labour or materials for house building.

NEW COMPANIES.

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, 116 & 117, Chancery-lane, W.C. 2, from the documents available at the Companies Registry :—

BEWLEY & SCOTT, LTD. (164,651). Back Taylor-terrace, Dunston-on-Tyne, co. Durham. Registered March 1. Contractors, builders, builders' merchants, &c. Nominal capital, £10,000.

BUSHEY ESTATES, LTD. (164,735). Registered March 2. Builders, architects, house and estate owners and agents. Nominal capital, £1,000.

New Buildings in Regent Street.

In the House of Commons this week, Sir A. Fell drew attention to the height of the proposed new buildings in Regent-street. He asked the Parliamentary Secretary to the Ministry of Agriculture whether it was proposed to erect buildings of eigh stories in height in place of the present buildings of four or five stories; if his attention had been called to the building erected at No. 133 and to the shade which it cast across the street; and if he was aware that at noon on March 4 the shade cast by the Piccadilly Hotel in the Quadrant covered the pavement on the north side, so that for four months in the year the sunny side of the Quadrant would be deprived of all sun if other buildings on the south side were raised to a similar height.

Sir Arthur Boscawen, said the Commissioners of Woods and Forests had not sanctioned and did not contemplate sanctioning the erection of any buildings on the Crown property in Regent-street higher than the new buildings already erected. The Commissioners had no reason to believe that the increased height would have the effect anticipated, though they agreed that it must diminish to a certain extent the sunniness of the street. They regretted that the increase of height was practically unavoidable.

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